

to the other members of the genus. The specimen is believed to be unique.

The following papers were read :—

1. ON STOASTOMIDÆ AS A FAMILY, AND ON SEVEN PROPOSED NEW GENERA, SIXTY-ONE NEW SPECIES, AND TWO NEW VARIETIES FROM JAMAICA. BY THE HON. EDWARD CHITTY.

*Stoastomidæ*! When I first open my cabinet of this Family to the spectator, two observations are generally made. The one, "How minute! how could you trouble yourself with such specks! they are not worth seeing, for we cannot see them." Then follows, "Well, they are very wonderful; but how did you collect them?"

To the first observation I answer, "True, they are but specks, and have very much injured my eyesight; but they are worth seeing under the microscope; for they are worthy to rank, and must rank, in point of sculpture, with the most wonderful and beautiful shells known to conchologists, and most of them are most worthy of a sculptor's or designer's study." Among the *Helices*, *Pupæ*, *Achatinæ*, *Cylindrellæ*, *Bulimi*, &c. there are plenty of minute species almost microscopic, and interesting enough; but, under the microscope, these only improve in size, and no further beauties are unfolded, and little further interest is given to them by its use. The *Stoastomidæ*, however, are not only wonderful for their minuteness, and from the knowledge that, however minute, they are part of an animal, perfect in its anatomy as that of the largest shell; but the form and sculpture of each species are so marked, that the microscope brings out in each, new beauties and new wonders, entitling them to rank among the most wonderful works in animal creation. And to say the least of these *Stoastomidæ*, "They are shells, and beautiful ones too, and are not only worthy, but *must*,—being known to exist,—be in every cabinet that pretends to the smallest degree of perfection or completion."

To the second I shall reply by practical information which I think will be valued.

"Easily attained, little valued," may be taken as a good general maxim. But my love for this family arose from a difficulty; and as it involves the history of *Stoastoma*, I may be permitted to relate it.

In the winter of 1848-49 the late Prof. C. B. Adams paid me a visit in Jamaica; and looking over a limited collection, he observed that which is now known as *Stoastoma pisum*. The singularity of its semicircular mouth was noticed by him, as it had been by me; but it then stood alone, and he put it on one side to be described as *Helicina pisum*, hesitating to give it generic importance. He next visited Manchester parish, the principal habitat of *St. pisum*; and meanwhile I, in my own garden in St. Thomas in the East parish, close to Yallahs Hill, found a minute shell with a somewhat similar mouth, about which I corresponded with him. This

turned out to be that wonderful and beautiful speck *St. Wilkinsonæanum*. He again in Manchester collected more specimens of *S. pisum* and other species of the family, and, first under the proposed generic name of "*Hemicyclostoma*," the species were finally placed under the generic name of "*Stoastoma*" at the suggestion of Dr. A. A. Gould. While Adams was still away from me, as I was examining my only specimen of *S. Wilkinsonæanum*, it dropped from my hand—fortunately on to the floor-cloth,—and I did not recover it till after a full hour's careful search. This showed me the folly of being satisfied with the possession of one specimen only, where others *might* be obtained; and I determined to make a vigorous search for more. I ransacked my garden and all round, in vain; for, as I now conclude, it had been brought there accidentally, perhaps by a bird; till at last I crossed a deep ravine, a streamlet at the bottom of it, and got to one side of what we call "Little Yallahs' Hill," which stands a good half-mile crow-fly distance from my garden; there I found a spot, a slope on the hill-side, with crumbling fine dirt running, or sifting as it were, down it. There I *first* found *Geomelania Greyana* (described as *Cylindrella Greyana*, Contrib. Conch. p. 82, till I made out the operculum of that genus). These were so numerous, and many so broken, that I put handfuls of the fine dirt into a small bag for home examination. The result was, plenty of *St. Wilkinsonæanum*, and other new species at the same time.

The plan of collecting all minute shells, beyond this "bagging" of dirt, is, to have a small zinc or tin tray about 9 inches long and 3 wide, with sides turning up all round half an inch high. I put about half a teaspoonful of dirt, such as I have alluded to, into it. Holding the tray at each end, and tilting it the furthest side downwards, shaking it lightly backwards and forwards, right and left, end to end, causes the dirt to fall and spread somewhat evenly along the outer edge; then, *levelling* the tray, a slight jerk from *side to side* of the tray causes the whole of the dirt to spread pretty evenly over the tray's surface, and exposes every minute object to view, with the aid of strong spectacles or a lens. A pointed wetted camel's-hair brush takes up and may deposit the minute subjects into a pill-box, or other receptacle, for future examination. The formation of Jamaica being mostly tertiary limestone, out of about a quart of such dirt as this, I have taken dozens and dozens of minute specimens of no less than thirty-one species, besides larger ones, which the naked eye could well see—probably upwards of fifty species from one quart of dirt altogether!

I am about to describe sixty-one new species, which, added to those described by Adams, make the total of eighty belonging to Jamaica. Yet let it not be imagined for one moment that I consider these are all that inhabit the island: on the contrary, I incline to think that that number might be doubled or trebled were the whole land explored.

I consider that the range of each species is very limited, and that

each spot of land suitable to them will contain distinct species which are not to be found elsewhere. *S. pisum* is a remarkable exception. That shell occurs in the Back Woods or highest mountains in the north of Manchester; at Porus, say ten miles "crow-fly" distance on the east border of Manchester; at Moreland and "Bull dead" in Manchester, say about the same distance south, near the western border: and again it is found at Accompong Town in St. Elizabeth's parish, at (say) twenty-five or thirty miles to the west. And it is curious to observe, that, taking Manchester back woods as the focus, I have collected and received shells from many intermediate spots between it and Porus and Moreland, and Bull dead and Accompong town, without getting one *St. pisum*, although many shells equal or smaller in size of other genera and species. But take any other of the *Stoastomidae*, and probably you will search for it in vain *outside* of a circumference of three-fourths of a mile from the spot where it first was found. Each such spot will contain probably as many as four or six or seven species; but to that spot all those species are confined. In the following descriptions it will be seen that the habitat of six species is certainly "Peace River:" and that that of eight species is as certainly Yallahs Hill. That latter I have personally explored; one of my residences was near by, and I repeatedly visited it; and I have no hesitation in saying that none of those eight species are to be found at half a mile either way. There are hundreds of spots of this kind in the island never trodden by human foot, and therefore there is no knowing how many *Stoastomidae* and other minute shells might yet be found, or how many of other genera, from large to small, may yet be added to the terrestrial conchology of Jamaica. The number of unique specimens in my cabinet tells us this truth, I having been a collector *in situ* for years by myself or my black deputies, who are rarely to be bribed into a repetition of a visit to a strange and unwelcome spot.

I must here record my great thanks to my friend Dr. S. Livesay for the personal assistance he has afforded me with some of these troublesome shells; but more especially, not only for the loan of his microscope throughout the labour, but for his most ingenious contrivances, which have been of the greatest help in the examination and measurement of shells, enabling me, by aid of one, to examine all parts by a rotatory motion, and at the same time to readily compare one shell with another; and by aid of another, on the sliding-scale principle, to measure by the thousandth part of an inch with the nicest accuracy and with the greatest facility. Future describing conchologists would do well to make inquiries of that gentleman.

In order to give a clearer understanding of my descriptions, it is well to state how I have proceeded to examine the shell. Dr. Livesay's apparatus consists of a plate on which a battery (as it were) of large pins may be placed in grooves, and kept firm by an upper plate, moveable at one end, so as to admit of removing them when required, and fixed at the other by a hinge. These pins are revolved in their grooves by the fingers, there being a small piece of rounded cork stuck on the point of the pin to lay hold of. The shell is gummed

on to the pin's head, so that the plane of aperture is parallel to the length of the pin, and the axis of the shell at right angles with it. In this position the operculum, if there, or if not, the inside of the aperture, and also the apex and umbilicus, and indeed all parts of the shell, except the point of attachment, can be brought under the microscope by revolving the pin.

Next, let me explain any new terms I may have used. In speaking of "above" or "below," I always consider the apex the uppermost, and the umbilicus the lowermost part. In speaking of "right" or "left," the outer edge of the aperture is considered to be on the right hand.

In pursuing the examination, we give in succession *Form* and *Colour*. Those two are manifest. *Sculpture*: we commence to describe the sculpture of the last whorl, and calculate from below the suture downwards towards the umbilical region at about a quarter from the aperture, or the last quarter or third of the last whorl. *Spiral carinæ* are sculptured raised lines, transverse to the axis or column of a shell. The *spire* and its outlines are self-evident. *Whorls* are counted from the aperture upwards; from that part to where it is opposite or attached to, what is termed, the body whorl, forms one whorl, and so on upwards, the whole, half, third, or quarter being determined by the exact termination of the appearance of a suture at the nuclear apex. The *aperture*, or mouth, though not audibly, speaks its own shape, &c. *Labrum* in *Stoastoma* is the edge of the right-hand portion of the aperture, extending from the suture, as it were, above, round on the right, till it finishes its curve below; the labium being the almost straight part on the left. Labral and labial, coined words, refer to those parts of the edge of the aperture, &c. Labrum "double" denotes a more or less fine, sharp groove close behind the very verge of the labral side of the aperture; and it shows that some at least of *Stoastomidæ* have peristome and peritreme, though never prominent or expanded as in *Choanopoma fimbriatum*, *C. Chittyi*, and the like.

The "*labral lamella*" is a term we adopt, equivalent to Adams's "spiral lamella," "lamellar spiral keel," "spiral carina continued into the lower extremity of the labrum," &c.; or the "lamelliform keel," "basal margin continued," &c., "small lamella," "raised lamella," &c. of Pfeiffer, Cat. Phan. I call it "*labral*" lamella, because it appears to me to grow out of the labral side of the shell, one specimen of *Lewisia Agassiziana* in progress of development clearly denoting the fact. It answers to the "*umbilical keel*" of some of the *Cyclotus*. In "*measurement*" of height the axis is placed at right angles to the base, so that "height" signifies distance between two parallel lines, the apex touching one, and the extreme lower edge of the aperture touching the other, the axis being at right angles. "Greatest breadth" measures from the edge of the aperture about the periphery to its extreme opposite at the other side of the last whorl, the axis being still at right angles. "Least breadth" is when three parts of the last whorl touch two parallel lines, that is, the plane or edge of the aperture, the back of



the last whorl, and narrowest part of it close to the aperture, or the penult whorl.

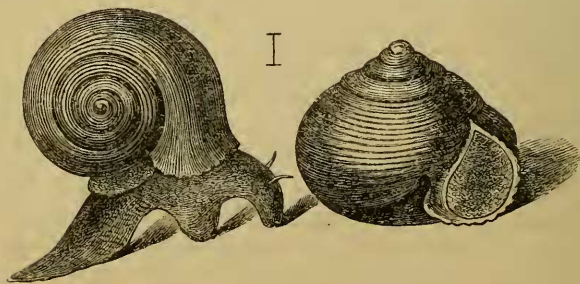
With, then, the one species from Polynesia, *Electrina succinea*, the total of *Stoastomidae* amount to 81 species known; and I proceed to propose an entirely new arrangement of them. Professor Adams foresaw the necessity and propriety of it. In his 'Monograph of *Stoastoma*,' p. 4, occur the following passages:—"The value of this genus is equal to that of the Lamarckian genera of *Cyclostoma* and *Helicina*. If these should be generally received as families, subdivided into several genera according to the plan of Dr. L. Pfeiffer, it will be entitled to constitute a distinct family, *STOASTOMIDÆ*. Some of the characters rarely, if ever, occur in other genera, while the specific differences consist partly in slight modifications of these characters. Such are the blunt but not reflected edge of the labrum and the spiral lamella issuing from the umbilicus. The genus has thus a very obvious type, quite distinct from any hitherto discovered. An affinity with the *Cyclostomidae* is established between *Aperostoma* (Troschel) and the depressed and discoidal species of *Stoastoma*." "Its affinity with the *Helicinidae* is established between *Lucidella* (Swainson) (?), and some of the conical species, as *S. Redfieldianum* and *S. Leanum*, by their general form and sculpture, and by the form of the base. But observations on the animals will be of more value on this subject. We were not so fortunate as to obtain living specimens. While preparing this Monograph, a correspondent informs us that *S. pisum* when alive is sea-green."

In raising *Stoastoma* into a family, I am thus justified by Professor Adams, and only carry out his views in calling it, Family *Stoastomidae*, Adams.

Fortunately I happen to be "the correspondent" who found the shell *S. pisum* in "a living state;" when it is, and continues after, if so taken, of a "sea-green" colour externally. I have also examined the outward form of the animal. The following are my rough original notes made long ago upon it:—

"*STOASTOMA PISUM*."

"The animal seems to have but one pair of horns, and is thus shaped.



[The drawing supposes the animal to be in motion.]

“Horns short, thick at base, and pointed. Mollusk black, or of the darkest bottle-green. Seems to aid its progress by its snout.”

So different, then, is the animal and shell from either *Cyclostomidæ* or *Helicinidæ*, that with propriety we may take it out of either family and place it as a distinct family, *STOASTOMIDÆ*, Adams, which I divide into the following genera; adding, however, to Adams' description, “all the species”—“are sculptured with spiral lines;” this, “except very rarely, as in the instance of *S. Philippianum* ;” and it is right also to mention, that this family possesses the habit of absorbing part of the internal structure of their shells, as pointed out by Mr. Bland in a paper read before the Lyceum of Nat. Hist. N. Y. (see *Annals*), Feb. 27th, 1854.

The genera will stand thus :—

First, those most singular shells having, as it were, two mouths, such as the only two hitherto known, *St. Agassizianum*, Ad., and *St. Philippianum*, Ad., demand a section to themselves. These and two others I shall call Genus *LEWISIA*, in compliment to Prof. Lewis Agassiz.

Secondly, those beautiful ones, like *St. Gouldianum*, with long projecting termination of the last whorl, and such decided sculpture of a few (four or six) strong transverse striæ, with fine ones intervening—being all of subdiscoidal form (“*Gouldia*” being preoccupied among marine shells), I shall call Genus “*WILKINSONÆA*,” in honour to the memory of the lady whose name it bears, as well as to that of Adams, it being the second shell of the kind he described: with a subdivision for those devoid of the lengthened last whorl, but with similar sculpture.

Thirdly, those singular shells with somewhat depressed spire, subangulated on the upper part of the last whorl, then *quasi* straight or flat at the periphery, and then subangulated again at the base, Genus “*FADYENIA*,” in memory of the lamented author of the ‘*Flora of Jamaica*.’

Fourthly, those shells which represent the *S. pisum*, the first type, and are subglobose, *STOASTOMA*.

Fifthly, depressed conic shells, like unto *S. Chittyanum*, Genus *METCALFEIA*; *S. Chittyanum* being the only one described by Adams.

Sixthly, the globose, discoidal forms, such as *Stoastoma Cumingianum* (that name being elsewhere preoccupied), I call Genus “*PETITIA*,” as the second named by Adams, and in compliment to M. Petit de la Saussaye.

Seventhly, globose conic shells, like *S. Lindsleyanum*, I call Genus “*LINDSLEYA*.”

And, eighthly, the subdiscoidal, like *S. Blandianum*, I nominate Genus “*BLANDIA*.”

In assigning the following new specific names, it will be found that I have adopted Prof. Adams's course of naming them after persons. In his list of nineteen species, only one, *S. pisum*, is otherwise named. I have called all my new genera after persons recorded by Adams,

and all my new species after scientific men, or persons living, well known among conchologists, the exceptions of personal friends being very few. And let me hope, that in so doing, I show the high esteem I feel this family of shells is entitled to, and also my great respect for the names I have made use of.

### STOASTOMIDÆ, Adams.

#### Gen. LEWISIA, Chitty.

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|-------------------------------|------------------------------------|
| 1. L. Agassiziana, <i>Ad.</i> | 3. L. Woodwardiana, <i>Chitty.</i> |
| 2. L. Philippiana, <i>Ad.</i> | 4. L. MacAndrewiana, <i>Ch.</i>    |

#### Gen. WILKINSONÆA, Chitty.

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|-----------------------------------|--------------------------------|
| 5. W. Wilkinsonæana, <i>Ad.</i>   | 12. W. Tappaniana, <i>Ad.</i>  |
| 6. W. Gouldiana, <i>Ad.</i>       | 13. W. Hollandiana, <i>Ad.</i> |
| 7. W. Schomburghkiana, <i>Ch.</i> | 14. W. Dysoniana, <i>Ch.</i>   |
| 8. W. Abbottiana, <i>Ch.</i>      | 15. W. Hanleyana, <i>Ch.</i>   |
| 9. W. Jardineiana, <i>Ch.</i>     | 16. W. Bensoniana, <i>Ch.</i>  |
| 10. W. Greenwoodiana, <i>Ch.</i>  | 17. W. Moussoniana, <i>Ch.</i> |
| 11. W. Laidlawiana, <i>Ch.</i>    |                                |

#### Gen. FADYENIA, Chitty.

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|----------------------------------|----------------------------|
| 18. F. Fadyeniana, <i>Ad.</i>    | 20. F. Grayana, <i>Ch.</i> |
| 19. F. Bowerbankiana, <i>Ch.</i> |                            |

#### Gen. STOASTOMA, Ad.

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|----------------------------------|-------------------------------|
| 21. S. pisum, <i>Ad.</i>         | 24. S. (Electrina) succineum, |
| 22. S. Pfeifferianum, <i>Ad.</i> | <i>Sowb.</i>                  |
| 23. S. Livesayanum, <i>Ch.</i>   |                               |

#### Gen. METCALFEIA, Chitty.

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|-----------------------------------|---------------------------------|
| 25. M. Metcalfeiana, <i>Ch.</i>   | 31. M. Sinclairiana, <i>Ch.</i> |
| 26. M. Chittyana, <i>Ad.</i>      | 32. M. Mitchelliana, <i>Ch.</i> |
| 27. M. Bacquiciana, <i>Ch.</i>    | 33. M. Dornhiana, <i>Ch.</i>    |
| 28. M. Sutherlandiana, <i>Ch.</i> | 34. M. Layardiana, <i>Ch.</i>   |
| 29. M. Mörchiana, <i>Ch.</i>      | 35. M. Swiftiana, <i>Ch.</i>    |
| 30. M. Verreauxiana, <i>Ch.</i>   |                                 |

#### Gen. PETITIA, Chitty.

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|-------------------------------|--------------------------------|
| 36. P. Petitiona, <i>Ad.</i>  | 39. P. Stevensiana, <i>Ch.</i> |
| 37. P. Cumingiana, <i>Ad.</i> | 40. P. Fortuneana, <i>Ch.</i>  |
| 38. P. Anthoniana, <i>Ad.</i> | 41. P. Adamsiana, <i>Ch.</i>   |

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|-------------------------------------------|---------------------------------------------------|
| 42. <i>P. Tayloriana</i> , <i>Ch.</i>     | 45. <i>P. Grevilleana</i> , <i>Ch.</i>            |
| 43. <i>P. Stricklandiana</i> , <i>Ch.</i> | 46. <i>P. Carpenteriana</i> , <i>Ch.</i>          |
| 44. <i>P. Stokesiana</i> , <i>Ch.</i>     | 47. <i>P. (? Lewisia) Barroniana</i> , <i>Ch.</i> |

## Gen. LINDSLEYA, Chitty.

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|---------------------------------------------|------------------------------------------|
| 48. <i>L. Lindsleyana</i> , <i>Ad.</i>      | 61. <i>L. Gaskoiniana</i> , <i>Ch.</i>   |
| 49. <i>L. Pickeringiana</i> , <i>Ch.</i>    | 62. <i>L. Newcombiana</i> , <i>Ch.</i>   |
| 50. <i>L. Redfieldiana</i> , <i>Ad.</i>     | 63. <i>L. Rüsseana</i> , <i>Ch.</i>      |
| 51. <i>L. Jayana</i> , <i>Ad.</i>           | 64. <i>L. Poeyana</i> , <i>Ch.</i>       |
| 52. <i>L. Leana</i> , <i>Ad.</i>            | 65. <i>L. Henryana</i> , <i>Ch.</i>      |
| 53. <i>L. Denisoniana</i> , <i>Ch.</i>      | 66. <i>L. Alderiana</i> , <i>Ch.</i>     |
| 54. <i>L. Polyblankiana</i> , <i>Ch.</i>    | 67. <i>L. Bridgesiana</i> , <i>Ch.</i>   |
| 55. <i>L. Albersiana</i> , <i>Ch.</i>       | 68. <i>L. Salléana</i> , <i>Ch.</i>      |
| 56. <i>L. Fischeriana</i> , <i>Ch.</i>      | 69. <i>L. Arthuriana</i> , <i>Ch.</i>    |
| 57. <i>L. Moricandiana</i> , <i>Ad.</i>     | 70. <i>L. Gutiereziana</i> , <i>Ch.</i>  |
| 58. <i>L. Reeveana</i> , <i>Ch.</i>         | 71. <i>L. Oweniana</i> , <i>Ch.</i>      |
| 59. <i>L. Shuttleworthiana</i> , <i>Ch.</i> | 72. <i>L. Wollastoniana</i> , <i>Ch.</i> |
| 60. <i>L. Boissieriana</i> , <i>Ch.</i>     |                                          |

## Gen. BLANDIA, Chitty.

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|--------------------------------------------|---------------------------------------|
| 73. <i>B. Blandiana</i> , <i>Ad.</i>       | 78. <i>B. Hilliana</i> , <i>Ch.</i>   |
| 74. <i>B. Jeffreysiana</i> , <i>Ch.</i>    | 79. <i>B. Trailliana</i> , <i>Ch.</i> |
| 75. <i>B. Bairdiana</i> , <i>Ch.</i>       | 80. <i>B. Lukesiana</i> , <i>Ch.</i>  |
| 76. <i>B. MacGillivrayana</i> , <i>Ch.</i> | 81. <i>B. Lowcana</i> , <i>Ch.</i>    |
| 77. <i>B. Troscheliana</i> , <i>Ch.</i>    |                                       |

## Genus I. LEWISIA, Chitty.

*Quasi double-mouthed.*

LEWISIA AGASSIZIANA, Chitty. See *Stoastoma Agassizianum*, *Ad. Cont. Conch.* p. 158; *Cat. Phan.* p. 234.

The habitat of this shell is near Ackendown, Westmoreland. The "deposit," of which Adams speaks, is still remaining in one of my specimens (the original type), and beyond a doubt is the operculum, like many others I shall describe. It is so fixed in the aperture, that I will not risk its breakage in removal, and so I cannot fully describe it. It is excessively concave in its centre, continued on the labial side in a long, broad, smooth, shining convex plate, shaped like a tongue, and extending almost and sinking into the opposite extreme of "the spiral lamella excessively developed and soldered," &c., as described by Adams.

LEWISIA PHILIPPIANA, Chitty. See *Stoastoma Philippiianum*, *Ad. Cont. Conch.* p. 158; *Cat. Phan.* p. 235.

*Operculum*, still — ?

*Hab.* Burnt Hill, near Ackendown, Westmoreland, *non* Ackendown.



## LEWISIA WOODWARDIANA, Chitty.

*Hab.* — ? Hanover (unique).

*Form*, subdiscoidal. *Colour*, very pale horn. *Sculpture*, 14 spiral carinæ, widely apart, rather blunt; about 4 visible on the penult whorl, lines of growth well defined. *Spire*, very slightly elevated, with concave outlines. *Whorls*, 4, very slightly rounded, with a lightly impressed suture; last whorl well rounded. *Aperture*, well detached from the body whorl, slightly depressed and slightly constricted, semielliptical. *Labrum*, double, slightly thickened, reflected and rounded off, smooth, plain, not scalloped. *Labium*, straight, edge produced angularly in its centre, and much rounded and reflected towards the umbilicus. *Labral lamella* (see *ante*), rises somewhat abruptly from the labrum, forming a cavity longer in its interior than the aperture, and joins the last whorl below, beyond the umbilicus, by rather a sharp inflection upwards; so that from its junction to outside the labium is not wider than the lesser diameter of the aperture; exteriorly very convex, with a deep suture between it and the last whorl beneath. *Umbilicus*, concealed. *Operculum*, — ?

Height 0.057, greatest breadth 0.083, least breadth 0.07.

Named in compliment to S. P. Woodward, Esq., British Museum, author of 'Manual of Recent and Fossil Shells,' &c.

## LEWISIA MACANDREWIANA, Chitty (unique).

*Hab.* Near the Botanic Garden, St. Andrew's. The smallest *Stoastoma*!

*Form*, subdiscoidal. *Colour*, pearl white, semitransparent, most likely therefore a young shell. *Sculpture*, 25 equidistant fine spiral carinæ. *Spire*, much depressed, with convex outlines. *Whorls*,  $3\frac{1}{4}$ , well rounded, with rather a deep suture; last whorl well rounded. *Aperture*, well rounded, more than a semicircle, very slightly expanded below; a little detached from penult whorl and very slightly depressed. *Labrum*, slightly double, thin, reflected very shortly, white, shining, smooth, planular. *Labium*, well detached from penult whorl, rather lower than plane of labrum, very slightly curved to the right below. *Umbilicus*, N.B. ! apparently very shallow, but covered by an externally convex white callosity, which proceeds from behind the upper end of the labium and covers the umbilicus, and is attached to the body whorl all but at its extreme left; whereunto it may, in older specimens, be entirely soldered. This, though incomplete at the aperture, bears the characters of a complete shell. The *labral lamella* is very slightly produced, rounded at its edge, quite separate from the above callosity on the right, but apparently joining the exterior of it on the left, round the umbilical region.

Height 0.024, greatest breadth 0.046, least breadth 0.036.

I have some doubts as to placing this unique specimen in this subgenus, but think that, from the callosity over the umbilicus and its seeming immaturity, and the appearance that the labral lamella

is not complete, it will, from older or other specimens, be found to be properly classed.

Named in compliment to Robert MacAndrew, Esq., so well known from his valuable dredging operations.

## Genus II. WILKINSONÆA, Chitty.

### § 1.

*Shell subdiscoidal; last whorl extraordinarily produced. Sculpture, a few strong and many fine carinæ.*

#### WILKINSONÆA WILKINSONÆANA, Chitty.

*Hab.* Yallahs Hill, East face.

The symmetrical form and beautiful sculpture induce me to rank it first. Is was also the second *Stoastoma* found, though not described till long after *S. Gouldianum*, the latter in Sept. 1849 and the former in Oct. 1850; for Adams at that time was inclined to treat it as a mere variety! *Stoastoma Wilkinsonæanum*, Ad. Cont. Conch. p. 148; Cat. Phan. p. 233.

#### WILKINSONÆA GOULDIANA, Chitty.

*Hab.* The backwoods in Manchester's highest mountains, northern region. *Stoastoma Gouldiana*, Ad. See Mon. Stoast. Adams, 1849, p. 5; Cat. Phan. p. 232.

Var. *a.* Ad.

Same habitat.

*Labrum* not so much produced above. *Aperture* more cupped and expanded in proportion. (See, as above.)

Var. *b.* Chitty.

*Hab.* Trelawny, still further north.

Is much smaller than var. *a.*, and labrum and aperture are miniature of *S. Gouldianum* proper.

Height 0.035, greatest breadth 0.073, least breadth 0.058.

#### WILKINSONÆA SCHOMBURGHKIANA, Chitty.

*Hab.* Moreland, Manchester.

*Form*, subdiscoidal. *Colour*, semitransparent very pale horn. *Sculpture*, lines of growth very apparent; counting from the suture, there are five less prominent and then one very prominent rounded spiral carinæ, three less and one very prominent, two less and one very prominent, two less and one prominent, three less and one very prominent, and eight less, gradually becoming finer round the umbilicus: visible on the upper whorls, three less, one prominent and two less. *Spire*, much depressed, with considerably convex outlines. *Whorls*,  $3\frac{2}{3}$  rds, well rounded but flattened at the lower part; suture very lightly impressed. *Aperture*, constricted at more than the width of

the last whorl from the labrum, about 0·015, and then convexly rounded externally and concavely internally; widely expanded, deflected below, subsemielliptical. *Labrum*, leaves the body at about 50°, very much thickened and reflected; pure white; deeply scoloped by the strong spiral carinæ, which form five blunted points. *Labium*\*, nearly straight above, curved below abruptly to the right and then to the left back again; much below the plane of the labrum, joining it at about the constriction of the aperture above, but rising to the plane below. *Umbilicus*, narrow and deep. *Labral lamella*, very slightly rounded, and projecting at its junction with the labrum, narrow and slightly produced below. *Operculum*, very broadly margined all round by a wide convex fold and a raised lamella on the labral side like the capital italic *D*; very deeply concave, with, in the hollow, three or four rounded raised ridges crossing diagonally from right above to left below, which are finely decussated diagonally from left to right, the labral side finely plaited, the lower left end expanding broadly, and folding over the lower part of the labium in thin plaits or laminæ; which plaits are continued on the lower side of the operculum. A very interesting shell.

Height 0·039, greatest breadth 0·074, least breadth 0·053.

Named in honour of Sir Robert Schomburgk, the celebrated traveller in Guiana, and great naturalist, &c.

#### WILKINSONÆA ABBOTTIANA, Chitty.

*Hab.* —? Hanover.

*Form*, subdiscoidal. *Colour*, white, subtransparent, shining. *Sculpture*, five very strong spiral carinæ, with, at the periphery, two highly microscopic, scarcely visible, intervening the strong lines; three rather stronger, below the lowest strong carina round the umbilicus; one strong on the upper whorls. *Spire*, much depressed, with convex outlines. *Whorls*, 4, very slightly rounded, with a light suture. *Aperture*, extraordinarily produced from the body-whorl, rather constricted far away from the labrum, and rather cupped inwards to the labrum; flattened above, expanded and depressed below, semielliptical. *Labrum*, extraordinarily produced and depressed at the uppermost strong spiral carina, slightly scoloped and pectinated at and by the other strong carinæ, reflected and thickened slightly. *Labium*, widely detached from the body-whorl, very little curved to the right below, very much below the plane of the labrum. *Umbilicus*, shallow and broad. *Labral lamella*, slightly and angularly spread out close to the labrum, then thin and narrow and not concealing the umbilicus. *Operculum*, most extraordinary, and who can describe it?! Very deeply concave in the middle, with a broad raised margin all round, very broad and much rounded on the labial side, which has a largely developed tooth-like horizontal plait or fold half-way down it descending into the hollow, and a much larger one proceeding from the lowest labial side, flowing, as it were, to the left

\* It is singular, that out of only ten specimens, every one should have the operculum which partially hides the labium.

well over the labial side, and also over the labium, not concealing the lowest part of the operculum, but showing the lowest part of the labial side to be broad and spreading,—trumpet-shaped. Unfortunately I possess but two specimens, only one having the operculum, which is so firmly fixed in the shell that I dare not further attempt its extraction, and therefore I cannot further examine its extraordinary structure.

Height 0·034, greatest breadth 0·066, least breadth 0·049.

Named in compliment to Captain George Abbott, of the R.W.I. Steam Mail Company's Service (at present commanding the 'Magdalena'), for his great care and attention in procuring and preserving specimens of natural history for the Zoological Society of London.

#### WILKINSONÆA JARDINEIANA, Chitty.

*Hab.* Swift River Head, St. George's.

*Form*, subdiscoidal. *Colour*, very pale horn. *Sculpture*, lines of growth visible; seven strong spiral carinæ, without intervening fine ones; three strong, on upper whorls. *Spire*, slightly elevated, with concave outlines. *Whorls*, 4, moderately convex, with a lightly impressed suture; last whorl wholly detached from the penult, extending about one-third the widest breadth of the shell beyond it, and angularly and pointedly produced above. *Aperture*, slightly constricted about the point of attachment to the penult whorl, then bulging or swelling out and becoming slightly constricted at the labrum; semi-elliptic, but modified by the below-mentioned depression of the labrum, and production of the last whorl, and also, in a corresponding degree, on the lower side. *Labrum*, produced above to an extraordinary degree at the second carina, and there very much depressed or bent inwards, thickened and reflected; very slightly scalloped by the spiral carinæ. *Labium*, much detached from the penult whorl; upon a plane with the lower part of the labrum, but much below it above; slightly sinuate above, and very much so to the right at its junction with the labrum below. *Umbilicus*, moderately deep, only partially concealed by the *labial lamella*, which is narrow and shortly incurved towards the umbilicus. *Operculum*, —?

Height 0·024, greatest breadth 0·059, least breadth 0·042.

Named in compliment to my friend Sir William Jardine, Bart., of Applegarth.

#### WILKINSONÆA GREENWOODIANA, Chitty.

*Hab.* —? Hanover.

*Form*, subdiscoidal. *Colour*, pale horn. *Sculpture*, lines of growth visible; three fine spiral carinæ and one strong, and so on until the fifth strong carina, below which, round the umbilicus, are six fine carinæ; on the upper whorls one strong in the centre of six fine carinæ. *Spire*, depressed with convex outlines. *Whorls*,  $3\frac{2}{3}$ , slightly convex, with lightly impressed suture. *Aperture*, separated from penult whorl in an elegant curved line, more than semicircular,



rather flattened above and very slightly expanded. *Labrum*, spreading not very prominently above, white and smooth, slightly reflected and expanded about its centre, pectinated very slightly by four of the stronger carinæ. *Labium*, slightly detached from penult whorl; sinuous, thin, and slightly reflected; on the plane of the labrum below, much below it above. *Umbilicus*, moderately deep and narrow, well circumscribed by the *labial lamella*, which is sharply and slightly produced. *Operculum*, —?

Height 0·032, greatest breadth 0·054, least breadth 0·044.

Named in compliment to Major Greenwood, whose collection of shells from New Zealand was sent by him to the British Museum.

#### WILKINSONÆA LAIDLAWIANA, Chitty.

*Hab.* Pool's Rock, Hanover.

*Form*, subdiscoidal. *Colour*, very pale green. *Sculpture*, 1st, 2nd and 3rd spiral carinæ, strong; 4th strongest; 5th, 6th and 7th strong; 8th strongest; 9th, 10th and 11th strong; 12th strongest; 13th, 14th and 15th strong; 16th strongest; 17th, 18th and 19th strong; 20th strongest; 21st and 22nd stronger; 23rd, 24th, 25th and 26th, round umbilicus, fine; the strong lines are all obsolete behind the aperture; on the upper whorls are 5 strong, 1 strongest, and 2 stronger carinæ. *Spire*, slightly elevated, with convex outlines. *Whorls*,  $3\frac{1}{2}$ , well rounded, with deep suture. *Aperture*, very slightly constricted at a distance from the labrum, and the strong carinæ become obsolete; thence, aperture well expanded; rather depressed above and expanded below; more than a semicircle. *Labrum*, very double, more so above than below; joins the body-whorl at the constriction by an angle of about  $70^{\circ}$ ; rather strongly produced at the first strongest carina; deeply and broadly pectinated and scalloped between the strongest carinæ, namely the 4th, 8th, 12th, 16th, and 20th, making five points; slightly thickened and reflected; white. *Labium*, slightly reflected, rather thin, slightly curved to the right above and below; well detached from the body-whorl; below the plane of the labrum. *Umbilicus*, moderately deep, broad; little affected by the *labral lamella*, though it is equally and strongly produced all round. *Operculum*, shallow in the centre and very flatly concave, with two sharp diagonal carinæ across it, from right above to left below: labral side with a broad border and raised lamella: upper end, diagonally plaited from left above to right below, and lower end the same, only from right above to left below.

Height 0·036, greatest breadth 0·064, least breadth 0·048.

Named in kind remembrance of my bosom friend, Henry Laidlaw, Esq., Stipendiary Justice, Manchester, Jamaica.

*Last whorl not strongly produced. Sculpture a few strong, and many fine carinæ.*

WILKINSONÆA TAPPANIANA, Chitty. See *Stoastoma Tappanianum*, Ad. Cont. Conch. p. 149; Cat. Phan. p. 233.

*Hab.* Peace River, Manchester.

WILKINSONÆA HOLLANDIANA, Chitty. See *Stoastoma Hollandianum*, Ad. Cont. Conch. p. 149; Cat. Phan. p. 234.

*Hab.* The back woods of Manchester.

WILKINSONÆA DYSONIANA, Chitty.

*Hab.* John Crow Hill, Portland.

*Form*, subdiscoidal or very depressed conic. *Colour*, very pale yellow. *Sculpture*, beautiful,—6 very highly raised sharp spiral carinæ, with about 11 very fine highly microscopic carinæ intervening in the first space below the suture, 9 on the second space, 7 on the third, fewer on the fourth and fifth, and very numerous beyond the sixth strong carina round the umbilicus. On the upper whorls, one strong carina in the middle, and one close above the suture, with a proportionate number of very fine intervening. *Spire*, slightly elevated, with very convex outlines. *Apex*, sharp. *Whorls*,  $4\frac{1}{4}$ , scarcely rounded, with very light suture; last whorl scarcely produced from the body-whorl. *Aperture*, very slightly constricted at the fauces, not expanded, except very slightly below. *Labrum*, pectinated and very slightly scalloped by the six strong carinæ, thin and sharp. *Labium*, detached from the penult whorl; on a plane with the labrum, very slightly rounded above, much below to the right. *Umbilicus*, very deep and suddenly narrowed. *Labral lamella*, very strongly produced close to the labrum above, less prominent round the umbilicus. *Operculum*, slightly concave in the middle, with a deep broad margin all round, very fine granulations in the hollow, with (?) four very fine distant carinæ crossing diagonally from right above to left below.

Height 0·04, greatest breadth 0·066, least breadth 0·053.

Named in compliment to the memory of the late Mr. David Dyson of Salford, so well known for his zoological researches in Central America, Venezuela, &c.

WILKINSONÆA HANLEYANA, Chitty.

*Hab.* Pool's Rock, Hanover.

*Form*, subdiscoidal, or very depressed conic. *Colour*, pale horn. *Sculpture*, lines of growth, wide apart: 3 strong spiral carinæ; 4th, stronger; 3 strong; 8th, stronger; 3 strong; 12th, stronger; 3 strong; 16th, stronger; 2 strong; 19th, stronger; and 4 strong round the umbilicus. On the upper whorls, 3 strong; 1 stronger; and 3 strong. *Spire*, slightly elevated, with straight or very slightly

concave outlines. *Whorls*,  $3\frac{1}{2}$ , well rounded with light suture. *Aperture*, much constricted behind the labrum, and then much dilated; depressed above and expanding below; subsemicircular. *Labrum*, double, slightly produced above; pectinated and slightly scalloped by the five stronger carinae; attached to the body-whorl and produced at an angle of about  $70^\circ$ ; slightly thickened and reflected. *Labium*, much lower than the plane of the labrum above; less so, below, moderately detached from the body-whorl; rather curved at both extremities. *Umbilicus*, shallow and broad, not affected by the labral lamella, which is fine and narrow throughout. *Operculum* —?

Height 0.041, greatest breadth 0.061, least breadth 0.047.

Named in compliment to Sylvanus Hanley, Esq., author of 'British Shells,' &c.

WILKINSONÆA BENSONIANA, Chitty.

*Hab.* Roaring River, Westmoreland.

*Form*, subdiscoidal. *Colour*, rather dark brown. *Sculpture*, six prominent sharp spiral carinae intermingled with eighteen less strong: on the upper whorls, one strong between about six less strong. *Spire*, very little elevated, with slightly concave outlines. *Whorls*,  $3\frac{1}{2}$ , slightly rounded with a very light suture. *Aperture*, semicircular, depressed above in the uppermost third, much expanded below. *Labrum*, much and pointedly produced above, at an angle of about  $75^\circ$  from the body-whorl, white, slightly thickened and reflected, angulated, not pectinated, by all five points of the sharper carinae. *Labium*, rather curved below, much detached from body-whorl, on a plane with the labrum at the lower end, much below it above. *Umbilicus*, rather deep and broad. *Labral lamella*, regularly produced, strong but narrow, subangularly pointed close at the labrum. *Operculum*, moderately concave, serpentine on the labial side, with a groove on the labral side.

Height 0.027, greatest breadth 0.049, least breadth 0.038.

Named in compliment to W. H. Benson, Esq., who has contributed so much to our Indian land-shells.

WILKINSONÆA MOUSSONIANA, Chitty.

*Hab.* Yallahs Hill.

*Form*, subdiscoidal. *Colour*, white, semitransparent. *Sculpture*, 22 lines, four of which are very slightly stronger than the rest, lowest most strong and prominent; on the upper whorls, 7. *Spire*, slightly elevated, with convex outlines. *Whorls*,  $3\frac{1}{2}$ , slightly rounded, with a light suture. *Aperture*, slightly expanded and depressed below, more than a semicircle. *Labrum*, thickened and reflected, double above, very slightly scalloped by the four stronger carinae, or rather the labrum is produced in straight lines to meet each stronger carina, forming three straight lines scarcely pectinated, in octagonal shape, moderately and roundly produced above from the body-whorl. *Labium*, rather curved, below the plane of the labrum above, moderately detached from the body whorl. *Umbilicus*, deep. *Labral lamella*, sharply, finely and uniformly produced. *Operculum*, slightly

concave, smooth, with ? two strong rounded carinæ vertically crossing the hollow.

Height 0·035, greatest breadth 0·058, least breadth 0·042.

Named in compliment to Prof. A. H. Mousson of Zurich, Switzerland.

### Genus III. FADYENIA, Chitty.

*Spire depressed, subangular on the upper part of the last whorl, subplanulate at the periphery, subangulate below, and subplanulate round the umbilicus.*

FADYENIA FADYENIANA. See *Stoastoma Fadyenianum*, Ad. Mon. Stoast. Adams, 1849, p. 7 ; Cat. Phan. p. 231.

*Hab.* Hills S.W. of Port Henderson.

Other shells, I have reason to know, have been distributed for this.

### FADYENIA BOWERBANKIANA, Chitty.

*Hab.* Roaring River, Westmoreland.

*Form*, subdiscoidal. *Colour*, very pale tinge of brown. *Sculpture*, 24 strong equidistant (above) spiral carinæ, wider apart below, and more faint round the umbilicus, and obsolete at the labrum ; with a hiatus between the 13th and 14th, equal to the space occupied by 3 carinæ, at the periphery ; 7 visible on the upper whorls. *Spire*, much depressed with concave outlines. *Apex*, mammillated. *Whorls*, 4, well rounded above, with a deep suture ; last whorl rather large and expanded ; subangular at the upper part, subplanulate at the periphery, and subangular below, subplanulate, but more convex round the umbilicus than in *F. Fadyeniana* ; the whorl is much wider above than below, so that the subplanulate periphery is nearly at right angles with the outline of the spire. It is the same in *F. Fadyeniana*. *Aperture*, very slightly constricted above behind the labrum ; dilated, large ; rather more constricted below, behind, and at the labrum ; upper third flattened almost at a right angle with the labium ; well rounded below. *Labrum*, simple, white. *Labium*, on a plane with the labrum, well detached from the body-whorl ; thickened and reflected towards the umbilicus, more so below than above ; much rounded to the right below. *Umbilicus*, rather deep. *Labral lamella*, well defined, strong and prominent, and inflected upwards towards the umbilicus. *Operculum* — ?

Height 0·041, greatest breadth 0·08, least breadth 0·063.

Named in compliment to my friend and fellow-labourer in science, Dr. L. Q. Bowerbank, M.D., of Kingston, Jamaica.

*Note.*—In *F. Fadyeniana* fine spiral carinæ intervene the coarser, and all are more distantly apart.

### FADYENIA GRAYANA, Chitty.

*Hab.* Yallahs Hill.

*Form*, subdiscoidal. *Colour*, rich light brown. *Sculpture*, about 33 irregular and inequidistant, some fine and some rather strong, No. CCCXXXVIII.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.



spiral carinæ, of which 8 or 9 are visible on the upper whorls. *Spire*, much depressed, less than in *F. Bowerbankiana*, with concave outlines. *Apex*, mammillated. *Whorls*,  $4\frac{2}{3}$  rds, with a moderate suture; last whorl typical, subangulated and subplanulated as in *F. Bowerbankiana* and *F. Fadyeniana*. *Aperture*, semicircular, only slightly affected by the subangularity above and below the periphery, very slightly dilated. *Labrum*, double; outer edge pectinated by the spiral carinæ, inner edge simple, white and shining. *Labium*, white, thickened and reflected towards the umbilicus about its centre, below much curved to the right, much lower than the plane of the labrum at its lower end; widely separated from the body-whorl. *Umbilicus*, very deep and narrow. *Labral lamella* very broadly and sharply produced throughout; besides the labral lamella within the umbilicus, extending from the back of the labium to the umbilicus and body-whorl, are four or five well-produced distinct sharp lamellæ. *Operculum*, deep concave in the centre, and a broad margin all round, which, on that side, folds well over the labrum, especially below; much covered by numerous coarse granulations, and in the hollow on the labral side with four or more strong raised lamellæ, which are also covered with coarse granulations.

Height 0·076, greatest breadth 0·105, least breadth 0·087.

Named in compliment to Dr. J. E. Gray, British Museum.

#### Genus IV. STOASTOMA, Adams.

*Shell subglobose.*

STOASTOMA PISUM, Ad. See Mon. Stoast. Adams, 1849, p. 11; Cat. Phan. p. 228.

*Sculpture*, almost obsolete, very numerous raised spiral microscopic carinæ, which are well defined on the upper whorls, four or five being visible. *Labrum*, double. *Labium*, well detached from the penult whorl. *Operculum*, concave and finely granulated in its concavity.

*Hab.* Manchester, generally, and near Accompong Town, St. Elizabeth.—*Chitty*.

STOASTOMA PFEIFFERIANUM, Ad. See Mon. Stoast. Adams, p. 8; Cat. Phan. p. 230.

*Labrum*, double. *Operculum*, concave, finely granulated in its concavity; margin sharp on the labral side, rather broad, but not thickened on the labial side.

*Hab.* Manchester back woods.—*Chitty*.

STOASTOMA LIVESAYANUM, Chitty.

*Hab.* Near Ashley Hall, Trelawny.

*Form*, subglobose. *Colour*, pale yellow. *Sculpture*, 11 distant, blunt and raised spiral carinæ, of which 5 are visible on the upper whorls. *Spire*, conic, moderately elevated, with slightly convex out-

lines. *Whorls*,  $4\frac{1}{3}$  rds, scarcely rounded, with a very light suture. *Aperture*, very slightly expanded; semielliptical, widest in the upper third of the labrum, very oblique. *Labrum*, pectinated by the spiral carinæ; double, very slightly reflected. *Labium*, slightly below the plane of the labrum, well detached from penult whorl, but connected with it by five or six of the spiral carinæ; arcuated to the left above into a sharp angle with the labrum, very much curved below to the right. *Umbilicus*, very small and deep. *Labral lamella*, strongly produced above, but immediately lost in the umbilicus. *Operculum*, semielliptical, planular, with fine granulations on the labral side, and concave on the labial side, with a raised ridge all round, which is much thickened and rounded, and highly raised about the lower part of the labral side.

Height 0·081, greatest breadth 0·103, least breadth 0·08.

Named in compliment to my friend Dr. Livesay, a devoted collector of genera.

STOASTOMA, or ELECTRINA, SUCCINEUM, Sowerby, will belong to this group. See Cat. Phan. p. 228.

#### Genus V. METCALFEIA, Chitty.

*Shell, depressed conic.*

METCALFEIA CHITTYANA, Chitty. See *Stoastoma Chittyana*, Ad. Mon. Stoast. Ad. 1849, p. 10; Cat. Phan. p. 231.

*Hab.* Peace River, Manchester.

*Operculum*, very slightly concave, with two strong lamellæ crossing its centre horizontally, and on the labial side two much finer ones above, and three or four below.

METCALFEIA METCALFEIANA, Chitty.

*Hab.* — ? Hanover.

*Form*, depressed conic. *Colour*, pale horn. *Sculpture*, lines of growth visible; sixteen strong, but not much raised inequidistant spiral carinæ, those round the umbilicus being most prominent, with here and there one very fine carina intervening. On the upper whorl, 5 carinæ. *Spire*, moderately elevated with very slightly concave outlines. *Apex*, obtuse. *Whorls*,  $4\frac{1}{2}$ , very moderately convex, with a lightly impressed suture. *Aperture*, subsemicircular, slightly spreading. *Labrum*, subangularly produced from the body-whorl, not abruptly produced, deeply pectinated by the spiral carinæ. *Labium*, slightly detached from the body-whorl, very slightly curved below to the right; much below the plane of the labrum. *Umbilicus*, very deep and narrow. *Labral lamella*, very little, but sharply, produced, not concealing the umbilicus. *Operculum*, slightly concave, finely granulated in the hollow with three strong apparently not serrated horizontal lamellæ, extending from the labral side over two-thirds of the width of the operculum, and one equally strong between

the first and second above extending one-third across only, the lowest slightly curved downwards.

Height 0·073, greatest breadth 0·096, least breadth 0·079.

Named in compliment to W. Metcalfe, Esq., the possessor of a fine cabinet of shells.

**METCALFEIA BAQUIÉANA, Chitty.**

*Hab.* Near "The Cave," high road, Westmoreland.

*Form*, depressed conic. *Colour*, rich brown, fading into faint yellow and white. *Sculpture*, 19 spiral carinæ, with one fine intervening each pair. On the upper whorls 6 carinæ. *Spire*, moderately and rather concavely elevated. *Whorls*,  $4\frac{1}{2}$ , slightly rounded with a lightly impressed suture. *Aperture*, slightly expanded, shortly and roundly produced from the penult whorl, scarcely depressed; sub-semicircular, rather dilated above. *Labrum*, pectinated by all the stronger carinæ, slightly scalloped. *Labium*, slightly detached from the penult whorl, rather abruptly detached from the labrum above and curved below to the right, much lower than the plane of the labrum below. *Umbilicus*, not deep. *Labral lamella*, expanded above, narrow round the umbilicus. *Operculum*, concave in the middle, seven lamellæ radiating horizontally from the labial side, one short and central above, one (the longest) crossing the hollow, one short on the labral side, one longer (second in length), one short, and two longer (third in length) below.

Height 0·06, greatest breadth 0·089, least breadth 0·071.

Named in compliment to my bosom friend, Mons. Baquié, of Westmoreland, Jamaica.

This shell is closely allied to *Metcalfeia Chittyana* at first glance, but differs in many minute particulars; the pectination on the labrum is alone sufficient to distinguish it; and their habitats are about sixty miles asunder. The spire is more conical than in *M. Chittyana*, spiral carinæ more distant, labium less widely detached from penult whorl, upper part of labrum more produced, apex is more blunt. In *M. Chittyana* the labral lamella expands suddenly above close to where it leaves the labium, rising above the plane of the aperture, and then descending round the umbilicus in a uniform curve without projecting; in *M. Baquiéana* it does not rise above the plane; but after leaving the labium, it spreads out towards the centre of the umbilicus, and continues uniform till it is lost in the umbilicus. In the former the lower end of the labium is on a plane with the labrum, in this it is below the plane. In this, the aperture is larger and more oblique, and the last whorl is less expanded.

**METCALFEIA SUTHERLANDIANA, Chitty.**

*Hab.* Belmont, St. James.

*Form*, depressed conic. *Colour*, very pale horn or white. *Sculpture*, lines of growth visible; 19 rather strong inequidistant spiral carinæ, with an unequal number of finer ones intervening. On the upper whorls 5 carinæ. *Spire*, moderately and rather concavely elevated. *Whorls*, 5, moderately elevated, with a deep suture.

*Aperture*, less than a semicircle, slightly expanded in the lower two-thirds, slightly oblique. *Labrum*, unequally and not strongly pectinated by the spiral carinæ, very slightly produced above. *Labium*, well detached from the body-whorl, attached to labrum above in a slight curve, very slightly waved in its centre, and well curved to the right below. *Umbilicus*, moderately deep, and labral lamella moderately produced. *Operculum*, — ?

Height 0·072, greatest breadth 0·12, least breadth 0·079.

Named in compliment to Dr. P. Sutherland, the Arctic voyager, now Government Surveyor of Port Natal.

#### METCALFEIA MÖRCHIANA, Chitty.

*Hab.* Roaring River, Westmoreland.

*Form*, depressed conic. *Colour*, very pale horn. *Sculpture*, 5 strong spiral carinæ, 1 fine; 7th strong and 3 fine; 8th to 15th strong and 1 fine intervening each; on the upper whorls 8 strong. *Spire*, slightly elevated with concave outlines. *Whorls*,  $4\frac{3}{4}$ , very slightly rounded with a light suture. *Aperture*, slightly expanded, more below than above; slightly produced, abruptly from the penult whorl; more than a semicircle. *Labrum*, thin, and very slightly reflected; pectinated by the strong carinæ. *Labium*, on a plane with the labrum above, lower below; joining the labrum with a curve above; much curved to the right, below well detached from the penult whorl. *Umbilicus*, narrow and deep. *Labral lamella*, well produced above and rather wide below. *Operculum*, moderately concave in the middle, with a wide border on the labial side, which is vertically grooved and again crossed by four or five raised horizontal plaits: labral side with about eight short horizontal lamellæ, about four extending across the hollow, and a linguiform point at the lower extremity of the labial side overlapping the labium.

Height 0·072, greatest breadth 0·1, least breadth 0·074.

Named in compliment to M. Mörch, of Copenhagen, distinguished for his knowledge of Mollusca.

#### METCALFEIA VERREAUXIANA, Chitty.

*Hab.* — ? Hanover.

*Form*, depressed conic. *Colour*, pale horn or yellow. *Sculpture*, 17 strong spiral carinæ with 1 fine intervening each. On the upper whorls 5 strong with 1 fine intervening. *Spire*, moderately elevated, with straight outlines. *Whorls*,  $4\frac{1}{2}$ , moderately rounded, with a light suture. *Aperture*, scarcely separated from the body-whorl, more than a semicircle, large, rather expanded and depressed below. *Labrum*, very slightly produced above, strongly and prominently pectinated by the strong carinæ, imbricated in those round the periphery, white and shining. *Labium*, slightly rounded into the labrum above, and on the right below; very slightly reflected; on a plane with the labrum above, lower below; very slightly detached from the body-whorl. *Umbilicus*, deep and narrow. *Labral lamella*, sharp and very slightly produced. *Operculum*, moderately concave, with large coarse granulations on the upper part of the labial side,



slightly lamellated horizontally ; lower portion of labial side broad and spreading over the labium, with a deep groove, and terminating with a broad uplifted linguiform plait, which is distinct from the spreading upper portion.

Height 0·06, greatest breadth 0·078, least breadth 0·06.

Named in compliment to M. Verreaux, an experienced zoological collector.

**METCALFEIA SINCLAIRIANA**, Chitty.

*Hab.* Maroon Town, St. James (unique).

*Form*, depressed conic. *Colour*, pale horn or yellow. *Sculpture*, 9 strong spiral carinæ, with one fine intervening ; on the upper whorls, 3 strong and fine ones intervening. *Spire*, slightly elevated, with rather concave outlines. *Apex*, rather acute. *Whorls*,  $4\frac{1}{4}$ , moderately rounded, with a light suture. *Aperture*, slightly spreading about the periphery to below ; subsemicircular. *Labrum*, very slightly produced above, more so below ; broadly detached from the body-whorl, strongly pectinated by the spiral carinæ. *Labium*, well detached from the body-whorl, on a plane with the labrum above, lower below, slightly curved to the right above, much so below, much thickened. *Umbilicus*, narrow and deep, well covered by the *labral lamella*. *Operculum*, —?

Height 0·057, greatest breadth 0·084, least breadth 0·067.

Named in compliment to Dr. Andrew Sinclair, R.N., late Colonial Secretary of New Zealand.

**METCALFEIA MITCHELLIANA**, Chitty.

*Hab.* Maroon Town, St. James (unique).

*Form*, depressed conic. *Colour*, pale horn. *Sculpture*, 15 strong spiral carinæ, rather inequidistant, with one very fine intervening, and about the periphery sometimes two and sometimes three fine carinæ : at the periphery the two strong carinæ are widest apart, with three fine intervening ; the next division below has one fine only, and the next below, two ; on the upper whorls four strong carinæ. *Spire*, slightly elevated, with rather concave outlines. *Whorls*,  $4\frac{1}{2}$ , slightly rounded, with a moderate suture ; last whorl expanded above and falling away below. *Aperture*, semicircular, much dilated below the periphery. *Labrum*, very slightly pectinated by the strong carina, very slightly produced above. *Labium*, on a plane with the labrum above, much lower below ; slightly curved to the right below, moderately detached from the body-whorl. *Umbilicus*, deep, little affected by the labral lamella. *Operculum*, —?

Height 0·07, greatest breadth 0·095, least breadth 0·077.

Named in compliment to D. W. Mitchell, Esq., the energetic Secretary of the Zoological Society of London.

**METCALFEIA DORHNIANA**, Chitty.

*Hab.* Pedro District, St. Ann's.

*Form*, depressed conic. *Colour*, pale horn. *Sculpture*, 4 strong spiral carinæ and 1 fine, 1 strong and 1 fine, 1 strong and 3 fine,

1 strong and 2 fine, and 1 strong and 3 fine, 1 strong, then 8 strong with fine intervening; on the upper whorls, 5 spiral carinæ. *Spire*, slightly elevated, with concave outlines. *Whorls*, 4, very slightly rounded with a moderate suture. *Aperture*, more than a semicircle, moderately expanded, very oblique. *Labrum*, moderately produced above, reflected, much pectinated by the strong spiral carinæ. *Labium*, well detached from the body whorl, curved to the right below, straight above, almost on a plane with the labrum. *Umbilicus*, deep and moderately broad. *Labral lamella*, strong, sharp and expanding, with a projecting angular point a little below its junction with the labrum. *Operculum*, —?

Height 0·052, greatest breadth 0·079, least breadth 0·061.

Named in compliment to Herr Heinrich Dohrn, of Stettin, a zealous young conchologist.

**METCALFEIA LAYARDIANA**, Chitty.

*Hab.* —? Westmoreland.

*Form*, depressed conic. *Colour*, rich light brown. *Sculpture*, about 25, slightly, unequally raised, inequidistant spiral carinæ; on the upper whorls 6 or 7. *Spire*, moderately elevated, with rather concave outlines. *Whorls*,  $4\frac{1}{4}$ , moderately rounded, with a moderate suture; last whorl well rounded. *Aperture*, moderately oblique, very moderately expanded and slightly deflected below, semicircular. *Labrum*, slightly produced above in a curved line, pectinated by about 15 of the spiral carinæ. *Labium*, moderately detached from the body-whorl, rather serpentine above and much curved to the right below. *Umbilicus*, deep and narrow. *Labral lamella*, but slightly expanded. *Operculum*, slightly concave, with about six horizontal raised lamellæ, nearly parallel above, but converging towards the umbilicus below, strong on the labial side, and faintly crossing over the labial side and covering the labium, with, on that side, others intervening.

Height 0·062, greatest breadth 0·086, least breadth 0·069.

Named in compliment to E. L. Layard, Esq., late of Ceylon, now Curator of the Museum, Cape Town, Cape of Good Hope.

**METCALFEIA SWIFTIANA**, Chitty.

*Hab.* Near Mr. Channer's, Santa Cruz Park, Saint Elizabeth (unique).

*Form*, depressed conic. *Colour*, pale horn, light brown at apex. *Sculpture*, 28 irregularly strong and inequidistant spiral carinæ; on the upper whorls 6. *Spire*, moderately elevated, with slightly concave outlines. *Whorls*,  $4\frac{1}{2}$ , moderately rounded, with a deep suture; last rather large. *Aperture*, slightly constricted and very slightly expanded at its margin; semicircular; slightly depressed above and slightly expanded below. *Labrum*, very slightly produced above; very slightly pectinated externally by, more or less, all the carinæ; smooth and white and shining at its extreme margin. *Labium*, well detached from body-whorl, on a plane with the labrum; much curved

to the right below and reflected to the left. *Umbilicus*, deep and narrow. *Labral lamella*, widely spreading. *Operculum*, —?

Height 0·059, greatest breadth 0·087, least breadth 0·069.

Named in compliment to Robert Swift, Esq., of the Island of St. Thomas, an ardent collector.

## Genus VI. PETITIA, Chitty.

*Shell, globose discoid.*

PETITIA PETITIANA, Chitty. See *Stoastoma Petitianum*, Ad. Ann. Lyc. New York, v. n. 2. p. 67; Contr. Conch. p. 151; Cat. Phan. p. 232.

*Hab.* Peace River, Manchester.

PETITIA CUMINGIANA, Chitty. See *Stoastoma Cumingianum*, Ad. Mon. Stoast. Ad. 1849, p. 9; Cat. Phan. p. 231.

*Hab.* —? Manchester.

*Note.*—If I have the right type of this shell, the *operculum*, in addition to the “numerous lamellar grains” described by Adams, has 6 or 7 very slightly raised vertical lamellæ curving from above to the left below, with an inner raised margin inclosing the concavity and sloping outwards to the extreme edge of the operculum.—*Chitty.*

PETITIA ANTHONIANA, Chitty. See *Stoastoma Anthonianum*, Ad. Contr. Conch. p. 151; Cat. Phan. p. 232.

*Hab.* —? Manchester.

PETITIA STEVENSIANA, Chitty.

*Hab.* Yallahs Hill.

*Form*, globose discoid. *Colour*, very light brown. *Sculpture*, 23 well-raised inequidistant spiral carinæ, wider apart below round the umbilicus; on the upper whorls 7. *Spire*, slightly elevated, with convex outlines. *Whorls*, 4, well rounded, with a deep suture. *Aperture*, subelliptical, well detached from the body-whorl; slightly constricted and scarcely expanded, and but little deflected below. *Labrum*, double, outer edge very finely pectinated by the spiral carinæ; inner edge white, smooth, slightly thickened and reflected; continuous with the labium above, with a slight curve. *Labium*, almost straight, very slightly curved to the right below, where it is below the plane of the labrum. *Umbilicus*, deep. *Labral lamella*, produced to a saw-like tooth at some little distance below its junction with the labium; convex externally. *Operculum*, —?

Height 0·047, greatest breadth 0·086, least breadth 0·065.

Named in compliment to the naturalist's universal friend, S. Stevens, Esq., Bloomsbury Street, London.

PETITIA FORTUNEANA, Chitty.

*Hab.* — ? Manchester.

*Form*, globose-discoid. *Colour*, very pale horn. *Sculpture*, 25 spiral carinæ, about 8 on the upper whorls. *Spire*, much depressed, with convex outlines. *Whorls*, 4, moderately rounded, with light suture. *Aperture*, constricted at about the width of the last whorl from the labrum, and then expanded considerably at about an angle of 30°, expanded above and deflected slightly below; more than a semicircle. *Labrum*, slightly double, especially above and below, less at the periphery; inner edge smooth, white and shining, broadly but slightly scalloped and finely pectinated by about 5 points; joined and rounded into the labium above; much produced angularly and deflected above; produced from the body-whorl at an angle of about 60°. *Labium*, straight, with a slight curve to the right below; on a plane with the labrum above, and slightly lower below. *Umbilicus*, very deep. *Labral lamella*, very sharp and narrow, not covering the umbilicus. *Operculum*, slightly concave, with apparently obsolete bars crossing it horizontally.

Height 0.043, greatest breadth 0.078, least breadth 0.061.

Named in compliment to Robert Fortune, Esq., the celebrated Chinese traveller and collector.

PETITIA ADAMSIANA, Chitty.

*Hab.* New Hope, Old Hope, and a smaller variety on the road east of the "Water-wheel," Westmoreland.

*Form*, globose-discoidal. *Colour*, reddish horn. *Sculpture*, 13 very strong spiral carinæ, with between the 1st and 2nd and 2nd and 3rd, 1 each rather less strong; between the 3rd and 4th and 4th and 5th, 3 each less strong; between the 5th and 6th, 1 less strong; between the 6th and 7th, 3 less strong; between the 7th and 8th, 1 less strong, and none between the remaining strong carinæ. Lines of growth very faint; on the upper whorls, 4 strong carinæ with intervening less strong. *Spire*, slightly elevated, with rather convex outlines. *Whorls*,  $4\frac{1}{2}$ , very slightly rounded and very light suture; last whorl slightly swelling behind the labrum, and slightly constricted at the aperture. *Aperture*, very slightly expanded and scarcely detached from the penult whorl. *Labrum*, appressed to the body-whorl, not produced, much thickened, slightly double below; smooth and simple. *Labium*, much thickened and reflected towards the umbilicus in its centre, slightly curved to the right below; well detached from the body-whorl. *Umbilicus*, moderately deep, covered by an expansion very convex externally of the *labral lamella*, which is much produced immediately after leaving the labrum, and then becomes abruptly narrowed till it joins the body-whorl. In the labral lamella it approaches the subgenus *Agassizia*. *Operculum*, very peculiar, deep concave in the centre and studded with very fine granulations; edge all round very much thickened and folded over in vertical plaits outside, especially at the lower end of the labial



side ; throughout the labial side overlapping the labium with sharp, fine, numerous raised lamellæ on the labral side.

Height 0·062, greatest breadth 0·09, least breadth 0·077.

Var. *a*.

From near "Water Wheel."

Height 0·044, greatest breadth 0·076, least breadth 0·061.

Named in honour to the memory of the late Professor C. B. Adams of America, my friend and conchological master.

#### PETITIA TAYLORIANA, Chitty.

*Hab.* — ? St. Ann's.

*Form*, globose-discoid. *Colour*, pale horn. *Sculpture*, 24 fine, sharp, inequidistant, spiral carinæ, 6 of which interspersed are rather strong ; on the upper whorls 5. *Spire*, very slightly elevated, with convex outlines. *Whorls*, 4, slightly rounded, with a light suture. *Aperture*, very slightly constricted behind the labrum, and slightly expanding ; scarcely detached from the body-whorl ; slightly depressed above and expanded below. *Labrum*, white, shortly reflected, not produced above, very little pectinated by the stronger spiral carinæ ; slightly double below. *Labium*, on a plane with labrum, straight, appressed above to the body-whorl. *Umbilicus*, rather deep and narrow. *Labral lamella*, scarcely produced. *Operculum*, slightly concave, rather produced at the upper corner of the labial side ; smooth, but not shining.

Height 0·033, greatest breadth 0·06, least breadth 0·043.

Named in compliment to T. L. Taylor, Esq., the possessor of a fine collection of shells.

#### PETITIA STRICKLANDIANA, Chitty.

*Hab.* Roaring River, Westmoreland.

*Form*, globose-discoid. *Colour*, rich red-brown. *Sculpture*, lines of growth apparent ; 38 inequidistant, irregularly raised, very fine spiral carinæ ; on the upper whorls 8. *Spire*, very little elevated, with convex outlines. *Whorls*,  $3\frac{2}{3}$  rds, well rounded, with a deep suture. *Aperture*, widely dilated, not constricted, more dilated and depressed below ; very slightly detached from body-whorl. *Labrum*, very widely double, moderately produced above, inner and outer edge strongly 'pectinated' and scolloped by 6 points of the spiral carinæ. *Labium*, very little detached from body-whorl, straight above and abruptly curved below to the right ; much below the plane of the labrum. *Umbilicus*, deep and rather broad. *Labral lamella*, very little produced. *Operculum*, slightly concave, with fine granulations in the hollow ; labral margin with two sharp raised lamellæ round it ; a small narrow linguiform point overlapping the labium at the lowest extremity on the labial side.

Height 0·049, greatest breadth 0·074, least breadth 0·055.

Named in compliment to H. E. Strickland, Esq., of Apperley Court, Tewkesbury, a liberal collector.

## PETITIA STOKESIANA, Chitty.

*Hab.* — ? Hanover (unique).

*Form*, globose-discoid. *Colour*, pale horn. *Sculpture*, lines of growth visible : 4 widely separated, rather strong, slightly raised, rounded spiral carinæ ; 1 finer ; 2nd to 7th strong, and 1 finer close below ; 8th strong (the one at the periphery strongest and rather sharp), and 2 very faint, round, and distant from the umbilicus ; on the upper whorls 5. *Spire*, very little elevated, with rather concave outlines. *Apex*, somewhat mammiform. *Whorls*, 4, well rounded, with a deep suture. *Aperture*, semicircular, altogether rather depressed, very slightly constricted, not spreading, moderately detached from penult whorl. *Labrum*, scarcely produced above, thickened, slightly reflected ; smooth and white, not pectinated. *Labium*, well detached from body-whorl, on a plane with labrum, almost straight within the aperture, white, thickened and expanded towards the umbilicus, much so below, but most so and somewhat pointedly in its centre. *Umbilicus*, broad and deep. *Labral lamella*, much expanded at a distance from its junction with the labrum, becoming very fine as it fades into the umbilicus. *Operculum*, — ?

Height 0·049, greatest breadth 0·08, least breadth 0·061.

Named in compliment to Capt. Lort Stokes, R.N., late of H.M.S. 'Acheron,' a zealous collector.

## PETITIA GREVILLEANA, Chitty.

*Hab.* Yallahs Hill.

*Form*, globose-discoid. *Colour*, pale horn. *Sculpture*, striæ of growth visible ; 5 strong spiral carinæ, with 5 less strong intervening : on the upper whorls, 2 strong, with the lesser intermediate ones (this might almost be classed in the 2nd division of *Wilkinsonæa*). *Spire*, slightly elevated, with straight outlines. *Whorls*,  $3\frac{2}{3}$  rds, well rounded, with a well impressed suture. *Aperture*, obliquely elliptic, more expanded in the upper than lower portion, slightly campanulate on the right owing to a slight constriction behind the labrum. *Labrum*, very slightly produced above, thickened and reflected at about its middle. *Labium*, below the plane of the labrum above, slightly curved to the right below and thickened, slightly detached from body-whorl. *Umbilicus*, not deep, broad. *Labral lamella*, slightly developed. *Operculum*, moderately concave, shining, but with very fine granulations.

Height 0·05, greatest breadth 0·069, least breadth 0·057.

Named in compliment to my friend Dr. R. K. Greville, of Edinburgh.

## PETITIA CARPENTERIANA, Chitty.

*Hab.* Pool's Rock, Hanover.

*Form*, globose-discoid. *Colour*, — ? *Sculpture*, striæ of growth visible : 8 strongest spiral carinæ and 1 strong ; 5 strongest and 1 strong in each interspace ; and 2 stronger round the umbilicus : on the upper whorls 3. *Spire*, much depressed with convex outlines.

*Whorls*,  $3\frac{2}{3}$  rds, moderately rounded, with a deep suture. *Aperture*, semicircular, rather constricted behind the labrum, not expanded, very slightly detached from the body-whorl. *Labrum*, not produced above, smooth, rather double, inner edge sharp, the strongest lines terminating abruptly at the outer edge. *Labium*, very slightly curved to the right below, well detached from the body-whorl, lower than the plane of the labrum below. *Umbilicus*, very shallow and broad, much covered by the *labral lamella*, which is much and widely produced above. *Operculum*, — ?

Height 0·038, greatest breadth 0·07, least breadth 0·054.

Named in compliment to P. P. Carpenter, Esq., of Warrington, author of an excellent Catalogue of the Mazatlan Shells in the British Museum.

#### PETITIA (? LEWISIA) BARRONIANA, Chitty.

*Hab.* — ? (unique).

*Form*, globose-discoidal. *Colour*, — ? *Sculpture*, 20 spiral carinæ, 7 of which are rather more prominent, namely the 2nd, 4th, 8th, 12th, 16th, 18th and 19th : on the upper whorls, 6. Striæ of growth visible. *Spire*, much depressed, with straight outlines. *Whorls*, 4, moderately rounded, with a light suture. *Aperture*, much constricted at the labrum, semicircular, widely separated from the body-whorl. *Labrum*, not produced above, simple, thin, rather double, slightly and coarsely pectinated on the inner edge, much thickened and slightly reflected. *Labium*, much reflected, moderately curved below, on a plane with the labrum above, lower below. *Umbilicus*, moderately deep, very broad, much concealed by the *labral lamella*, which spreads enormously and suddenly above, exteriorly convex (? *Lewisiana*). *Operculum*, very deeply concave in the centre, finely granulated, upper margin broad, and indented on the labral side, and enormously spread convexly over the lower end of the labium ; almost equal to the spread of the labral lamella, deeply grooved at the lower end, terminating in a linguiform projection.

Height 0·048, greatest breadth 0·084, least breadth 0·065.

Named in compliment to Charles Barron, Esq., Curator of the Royal Naval Museum, Haslar.

#### Genus VII. LINDSLEYA.

*Shell*, globose-conic.

LINDSLEYA LINDSLEYANA, Chitty. See *Stoastoma Lindsleyanum*, Adams. Mon. Stoa. Ad. 1849, p. 12 ; Cat. Phan. p. 229.

*Hab.* Manchester back-woods.

LINDSLEYA PICKERINGIANA, Chitty.

*Hab.* — ? , ? Manchester, ? Yallahs Hill.

*Form*, globose-conic. *Colour*, very pale horn. *Sculpture*, 17 strong blunted rounded spiral carinæ, within each interspace one or rarely two very fine carinæ : on the upper whorls 5, with a fine one

in each interspace. *Spire*, well elevated, with straight outlines. *Apex*, rather sharp. *Whorls*, 5, well rounded, with a deep suture. *Aperture*, almost exactly semicircular, rather depressed below. *Labrum*, rather curvilinear in its plane, very slightly produced above, pectinated strongly by the strong carinæ. *Labium*, moderately detached from body-whorl, very slightly curved to the right below; on a plane with the labrum above, slightly lower below. *Umbilicus*, moderately deep and broad. *Labral lamella*, produced broadly, but sinking immediately into the umbilicus. *Operculum*, moderately concave, with a rather broad margin, with, on the labral side, 5 or 6 raised lamellæ converging towards the umbilicus, the labral side close to its lower extremity bending to the right like the labium, and at its very extremity furnished with a fine linguiform projection which spreads slightly over the labium.

Height 0·086, greatest breadth 0·14, least breadth 0·086.

Named in compliment to John Pickering, Esq., an extensive collector of British shells.

This shell in many respects resembles *L. Lindsleyana*, but is much larger, and its proportions under measurement are very dissimilar; its aperture is wider, and apex much sharper.

*LINDSLEYA REDFIELDIANA*, Chitty. See *Stoastoma Redfieldianum*, Adams. Mon. Stoas. Ad. 1849, p. 13; Cat. Phan. p. 229.

*Hab.* Peace River, Manchester.

*LINDSLEYA JAYANA*, Chitty. See *Stoastoma Jayanum*, Adams. Mon. Stoas. Ad. 1849, p. 14; Cat. Phan. p. 230.

*Hab.* —? Manchester.

*LINDSLEYA LEANA*, Chitty. See *Stoastoma Leanum*, Adams. Mon. Ad. Stoas. p. 15; Cat. Phan. p. 229.

*Hab.* Peace River, Manchester.

*LINDSLEYA DENISONIANA*, Chitty.

*Hab.* Moreland, Manchester.

*Form*, globose-conic. *Colour*, pale horn. *Sculpture*, lines of growth visible: 4 strong spiral carinæ and 1 fine; 6th strong, 7th fine; 8th strong, and 9th and 10th fine; 11th strong, 12th to 15th fine; 16th strong, 17th to 19th fine; 20th strong, 21st to 23rd fine; 24th strong, 25th and 26th fine; 27th strong, and 28th to 36th fine; on upper whorls, 5 strong, with fine ones on the intermediate spaces. *Spire*, much and concavely elevated. *Whorls*,  $3\frac{3}{4}$ , convex, with a well-impressed suture. *Aperture*, more than a semicircle, more angular above than *L. Leana*, very slightly constricted and dilated again slightly, more so below; less campanulate than *L. Leana*; aperture larger and wider above than *L. Leana*. *Labrum* not produced above, continuous all round with labium, sharply and slightly reflected at rather more than a right angle, with a ridge on the inner side, very slightly pectinated by about ten points of the



strong spiral carinæ, not thickened as in *L. Leana*; rather double below. *Labium*, on a plane with labrum, more closely appressed to body-whorl above. *Umbilicus*, narrow, much deeper and wider than in *L. Leana*. *Labral lamella*, very slightly developed. *Operculum*, —?

Height 0·06, greatest breadth 0·074, least breadth 0·056.

Named in compliment to John Denison, Esq., well known for his extensive collection of shells.

**LINDSLEYA POLYBLANKIANA**, Chitty.

*Hab.* —? Westmoreland.

*Form*, globose-conic. *Colour*, light red-brown. *Sculpture*, an uncountable number, say 50, extremely fine, raised, wavy, well-defined spiral carinæ; about 20 on the upper whorls. *Spire*, well elevated, with convex outlines. *Apex*, acute. *Whorls*,  $4\frac{1}{4}$ , quite round, with a very deep suture. *Aperture*, subelliptical, rather flattened above and broad spreading, narrowed below and rather straightened on the labial side, not in the least degree angular above or below; labrum and labium continuous, much reflected. *Labrum*, excessively double, especially above, where the outer stands clear out from the inner edge. *Labium*, much reflected and closely attached to body-whorl, very little straightened. *Umbilicus*, deep and narrow. *Labral lamella*, very fine and narrow, lost immediately in the umbilicus. *Operculum*, —?

Height 0·069, greatest breadth 0·071, least breadth 0·056.

Named in compliment to George Polyblank, Esq., a liberal amateur collector.

**LINDSLEYA ALBERSIANA**, Chitty.

*Hab.* John Crow Hill, Portland.

*Form*, globose-conic. *Colour*, pale yellow. *Sculpture*, 25 fine spiral carinæ; on the upper whorls 9 or 10. *Spire*, well elevated, with rather convex outlines. *Whorls*, 5, well rounded, with a deep suture. *Aperture*, subelliptical, labrum and labium being continuous; white, smooth; slightly expanded and deflected below, very slightly detached from body-whorl, and almost vertical. *Labrum*, double; smooth, white, not affected by the spiral carinæ; continuous with the labium. *Labium*, moderately detached from body-whorl. *Umbilicus*, moderately deep, not affected by the *labral lamella*, which is very little produced. *Operculum*, moderately concave, smooth and shining.

Height 0·049, greatest breadth 0·063, least breadth 0·044.

Named in compliment to Dr. J. C. Albers, of Berlin.

This shell is like *L. Arthuriana*, but differs materially in sculpture, number of whorls, and measurement.

**LINDSLEYA FISCHERIANA**, Chitty.

*Hab.* —? St. Ann's.

*Form*, globose-conic. *Colour*, pale yellow. *Sculpture*, 6 strong spiral carinæ, with 1 fine in the interspaces; then 3 fine and 1 strong;

then 1 fine and 5 strong, with 1 fine in the interspaces; then 3 fine and 1 strong and 1 fine and 1 strong; on the upper whorls 5 strong and 1 fine in each interspace. *Spire*, well elevated with straight outlines. *Whorls*,  $4\frac{2}{3}$  rds, well rounded, with a deep suture. *Aperture*, very slightly expanded and depressed, scarcely separated from the body-whorl, semicircular. *Labrum*, white, shining, very slightly produced above, very slightly double, largely pectinated by 11 points of the strong carinæ. *Labium*, slightly detached from the body-whorl, upper three-fourths straight, rather abruptly curving to the right below; on a plane with labrum. *Umbilicus*, deep and narrow. *Labral lamella*, strong, wide and sharp, projecting in an angular point a little below its junction with labrum. *Operculum*, —?

Height 0·072, greatest breadth 0·086, least breadth 0·072.

Named in compliment to M. Paul Fischer, the well-known French conchologist.

LINDSLEYA MORICANDIANA, Chitty. See *Stoastoma Moricandianum*, Adams, Cont. Conch. p. 150; Cat. Phan. p. 230.

*Hab.* Yallahs Hill?

LINDSLEYA REEVEANA, Chitty.

*Hab.* The borders of Manchester, Trelawny and St. Ann's.

*Colour*, pale horn. *Sculpture*, 7 strong spiral carinæ, those about the periphery being more distant apart, with in each interspace 3 finer carinæ; on the upper whorls 4 strong carinæ: almost obsolete behind the labrum. Striæ of growth slightly visible. *Spire*, well elevated, with slightly convex outlines. *Whorls*, 4, well rounded, with a deep suture; last whorl well rounded and very globose. *Aperture*, peculiar and very large and spreading, considerably constricted far behind the labrum, very much expanding again like the half of the bowl of a spoon; subangular above and below on the left, depressed above, well dilated on the right below, widest horizontally, flattened below. *Labrum*, at about  $\frac{1}{3}$  rd of the length of the constriction, attached to the body-whorl, in, as it were, a curvilinear opening of about  $35^{\circ}$ ; the spiral carinæ at the back almost obsolete and striæ of growth stronger; double, the outer edge pectinated by 7 points of the stronger carinæ and scolloped; inner edge much thickened, pectinated by about 4 points, much produced and deflected above, modifying the aperture. *Labium*, appressed in its upper end to the penult whorl, straight above, slightly curved to the right below, very much below the plane of the labrum. *Umbilicus*, rather deep and very narrow. *Labral lamella*, very finely produced. *Operculum*, well thickened on the labial side, very slightly concave and smooth.

Height 0·061, greatest breadth 0·073, least breadth 0·061.

Named in compliment to Lovell Reeve, Esq., the able conchologist.

LINDSLEYA SHUTTLEWORTHIANA, Chitty.

*Hab.* Burnt Hill Glade, Westmoreland (unique).

*Form*, globose-conic. *Colour*, —? *Sculpture*, striæ of growth

very visible, oblique; about 16 strong sharp spiral carinæ, stronger below, with one faint finer in each interspace; on upper whorls 5 strong, with finer intervening. *Spire*, slightly and rather concavely elevated. *Whorls*, 5, moderately convex, with a deep suture; last whorl large and spreading behind the labrum, but, on the left, assimilating the form of the subgenus *Metcalfeia*, and rather falling off below. *Aperture*, semicircular, except as modified by the labium; very slightly spreading. *Labrum*, thin, slightly reflected, pectinated by about 10 points, 4 fine and close on the upper part, 6 strong and wide apart round the periphery, strongest at the periphery; above, moderately produced from the body-whorl in a graceful curve. *Labium*, well detached from the body-whorl, curved throughout, below the plane of the labrum at lower end, thickened and reflected towards the umbilicus. *Umbilicus*, deep and narrow. *Labral lamella*, very slightly produced and immediately merged in the umbilicus. *Operculum*, — ?

Height 0·072, greatest breadth 0·12, least breadth 0·084.

Named in compliment to Robert Shuttleworth, Esq., of Berne, the well-known botanical and conchological collector and author.

LINDSLEYA BOISSIERIANA, Chitty.

*Hab.* New Forest, Manchester.

*Form*, globose-conic. *Colour*, pale horn. *Sculpture*, striæ of growth visible: 12 prominent not very strong spiral carinæ, with between the 1st and 2nd, 2 finer carinæ; between 2nd and 3rd and 3rd and 4th, 1 fine; between 4th and 12th, 2 fine; beyond the 12th, 5 or 6 very, fine round the umbilicus: on the upper whorls 5 strong, with intermediate fine. *Spire*, well elevated, with slightly convex outlines. *Whorls*, 5, well rounded, with a deep suture. *Aperture*, more than a semicircle, moderately expanded and slightly deflected below. *Labrum*, but slightly separated or produced from the body-whorl, well pectinated by the strong carinæ. *Labium*, slightly detached from body-whorl, on a plane with labrum above; slightly lower below, moderately curved to the right. *Umbilicus*, deep and narrow. *Labral lamella*, rather produced at junction with labrum, narrow below. *Operculum*, slightly concave, five horizontal lamellæ across it, strongest in the middle, fine granulations, a linguiform sharp projection overlapping the labium.

Height 0·064, greatest breadth 0·083, least breadth 0·067.

Named in compliment to M. Edward Boissier, of Geneva, the eminent naturalist.

LINDSLEYA GASKOINIANA, Chitty.

*Hab.* Near Ashley Hall, Trelawny.

*Form*, globose-conic. *Colour*, white. *Sculpture*, 14 strong spiral carinæ, with 2 fine in each interspace; on the upper whorls 5, with fine ones intervening. *Spire*, well elevated, with straight outlines. *Whorls*,  $4\frac{1}{2}$ , with a moderate suture. *Aperture*, more than a semicircle, subelliptical. *Labrum*, detached from the body-whorl, produced moderately above, very strongly pectinated by about 13 points,

slightly expanded, reflected, and depressed below. *Labium*, slightly detached from the body-whorl, curved to the left above, and more so to the right below. *Umbilicus*, shallow and narrow, partially hidden by the gracefully curved but slightly projecting *labral lamella*. *Operculum*, very slightly concave, with a few coarse granulations, overlapping the labium on the labial side.

Height 0·064, greatest breadth 0·084, least breadth 0·064.

Named in compliment to J. S. Gaskoin, Esq., a lover of and writer on conchology.

*LINDSLEYA NEWCOMBIANA*, Chitty.

*Hab.* Clarendon Mountains (damaged, unique).

*Form*, globose-conic. *Colour*, —? *Sculpture*, 18 strong rounded spiral carinæ, with 2 finer intervening at the periphery; on the upper whorls 5. Striæ of growth visible. *Spire*, well-elevated, with rather concave outlines. *Whorls*, 5, moderately rounded, with a well-impressed suture. *Aperture*, semicircular, scarcely detached from body-whorl, not expanded or depressed, except slightly below. *Labrum*, very little produced above, pectinated by all the strong lines. *Labium*, well-detached from body-whorl, slightly curved below, on a plane with labrum above, lower below. *Umbilicus*, deep and narrow. *Labral lamella*, slightly and evenly produced. *Operculum*, —?

Height 0·08, greatest breadth 0·1, least breadth 0·081.

Named in compliment to Dr. Newcomb, of Albany, N. Y.

*LINDSLEYA RIISEANA*, Chitty.

*Hab.* Near Mr. Channer's, Santa Cruz Park, St. Elizabeth (unique).

*Form*, globose-conic. *Colour*, pale yellow. *Sculpture*, 13 sharp spiral carinæ with 1 finer in each interspace; on the upper whorls 3 strong with fine intervening. *Spire*, well-elevated, with straight or very slightly concave outlines. *Whorls*,  $4\frac{1}{4}$ , very much rounded, with a deep suture; last whorl large. *Aperture*, sub-semielliptical, slightly expanded, rather flattened above and expanded below. *Labrum*, double, white, thickened, slightly scolloped and pectinated by 8 points, continuous with the labium, very slightly produced above. *Labium*, well-detached from body-whorl, continuous with labrum, much curved, more so below, very slightly lower than plane of the labrum below. *Umbilicus*, moderately deep and broad. *Labral lamella*, very slightly produced. *Operculum*, —?

Height 0·049, greatest breadth 0·067, least breadth 0·05.

Named in compliment to A. H. Riise, Esq., of the Island of St. Thomas, a scientific conchologist.

*LINDSLEYA POEYANA*, Chitty.

*Hab.* John Crow Hill, Portland.

*Form*, globose-conic. *Colour*, pale horn, almost white at the aperture. *Sculpture*, about 18 strong spiral carinæ, with here and

No. CCCXXXIX.—PROCEEDINGS OF THE ZOOLOGICAL SOCIETY.



there 1 fine carina intervening, rather inequidistant; on the upper whorls 4. *Spire*, well-elevated, with straight outlines. *Whorls*,  $4\frac{3}{4}$ , scarcely convex, with a very light suture. *Aperture*, larger than semicircular, rather flattened above, moderately expanded, much on the right below. *Labrum*, slightly double and very little pectinated by the carinæ, produced above and much reflected, scarcely detached from body-whorl. *Labium*, little detached from body-whorl, straight, except the curve to the right below; very little below the plane of labrum in the lower part. *Umbilicus*, moderately deep. *Labral lamella*, very little produced. *Operculum*, concave, minutely granulated.

Height 0·077, greatest breadth 0·11, least breadth 0·078.

Named in compliment to M. Felipe Poey, now of the Havanna.

LINDSLEYA HENRYANA, Chitty.

*Hab.* Pool's Rock and Halley's Mountain, Hanover.

*Form*, globose-conic. *Colour*, pale horn. *Sculpture*, 18 blunt coarse spiral carinæ, with 1 very fine (about the periphery) intervening; on the upper whorls 7. *Spire*, well-elevated, with straight outlines. *Whorls*,  $4\frac{1}{2}$ , well-rounded, with deep suture. *Aperture*, very slightly expanded, more than a semicircle, spreading above and below, very slightly detached from the body-whorl. *Labrum*, thin and smooth, pectinated by about 10 points outwards, scarcely produced above. *Labium*, moderately detached from body-whorl, thin, curved to the right below, on a plane with the labrum above, rather lower below. *Umbilicus*, rather broad, and suddenly very deep. *Labral lamella*, considerably produced, more expanded above; within the umbilicus, and higher up the outside of the labium is another lamella, almost as strong as the labral lamella. *Operculum*, slightly concave, with about 12 very coarse granulations on the labral lower side.

Height 0·053, greatest breadth 0·067, least breadth 0·054.

Named in compliment to Henry Adams, Esq., of London, the conjoint author with his brother Arthur Adams.

LINDSLEYA ALDERIANA, Chitty.

*Hab.* John Crow Hill, Portland.

*Form*, globose-conic. *Colour*, pale yellowish horn. *Sculpture*, striæ of growth visible; 17 strong spiral carinæ, with 1 fine in each interspace, 3 fine intervening at the periphery, where the strong carinæ are wide apart; on the upper whorls 3, with finer intervening. *Spire*, well-elevated, with slightly concave outlines. *Whorls*, nearly 5, moderately convex, with a moderate suture. *Aperture*, semicircular, slightly expanded below. *Labrum*, slightly produced above, rather reflected, scarcely detached from the penult whorl, rather strongly pectinated by about 11 of the spiral carinæ. *Labium*, very slightly curved to the right, else almost straight, moderately detached from the body-whorl, rather below the plane of the labrum. *Umbilicus*, very deep. *Labral lamella*, slightly produced. *Oper-*

*culum*, slightly concave, crossed horizontally by 5 lamellæ, labial side plaited vertically.

Height 0·068, greatest breadth 0·086, least breadth 0·073.

Named in compliment to Josiah Alder, Esq., of Newcastle.

#### LINDSLEYA BRIDGESIANA, Chitty.

*Hab.* Bodle's Pen Wood (high road to Clarendon), St. Dorothy.

*Form*, globose-conic. *Colour*, very pale horn. *Sculpture*, 19 strongly raised spiral carinæ; on the upper whorls 6. *Spire*, moderately elevated, with rather concave outlines. *Whorls*,  $4\frac{3}{4}$ , moderately rounded, with a moderate suture. *Aperture*, semicircular, very slightly expanded above, more so below. *Labrum*, scarcely detached from body-whorl, slightly produced above, pectinated and scolloped bluntly by about 15 of the carinæ. *Labium*, straight, except a slight curve below; moderately detached from the body-whorl, rather below the plane of the labrum in lower end. *Umbilicus*, deep. *Labral lamella*, rather produced at its junction with the labrum, moderately broad round the umbilicus. *Operculum*, moderately concave, a very few coarse granulations, with 8 or 10 very short raised lamellæ converging to, but not reaching, the centre, on the labral side; a linguiform sharp projection overlapping the lower extremity of the labium.

Height 0·06, greatest breadth 0·076, least breadth 0·063.

Named in compliment to Thomas Bridges, Esq., an able zoological and botanical collector, particularly in Chili and other parts of South America.

#### LINDSLEYA SALLÉANA, Chitty.

*Hab.* New Forest, Manchester (unique).

*Form*, globose-conic. *Colour*, — ? *Sculpture*, 12 strong spiral carinæ, 2 fine in each interspace and 3 less strong round the umbilicus: on the upper whorls 4 corresponding fine ones. *Spire*, well-elevated, with rather concave outlines. *Whorls*,  $4\frac{3}{4}$ , well-rounded, with a deep suture. *Aperture*, slightly expanded above, more so below, scarcely detached from last whorl, more than a semicircle. *Labrum*, scarcely produced from body-whorl, not produced above, very slightly reflexed and thickened, coarsely pectinated by the strong carinæ. *Labium*, moderately detached from body-whorl, slightly curved throughout, on a plane with labrum. *Umbilicus*, broad and moderately deep. *Labral lamella*, much produced at its junction with labrum, below, sharp, and dipping abruptly into the umbilicus. *Operculum*, — ?

Height 0·079, greatest breadth 0·092, least breadth 0·073.

Named in compliment to M. Auguste Sallé, an excellent zoological collector.

#### LINDSLEYA ARTHURIANA, Chitty.

*Hab.* John Crow Hill, Portland.

*Form*, globose-conic. *Colour*, light yellow. *Sculpture*, 31 raised spiral carinæ, not quite equidistant; on the upper whorls 7. *Spire*,

well-elevated, with rather convex outlines. *Whorls*,  $3\frac{2}{3}$  rds, very well rounded, with a deep suture, last whorl very globose. *Aperture*, slightly and somewhat abruptly expanded, more than a semicircle, subelliptical, slightly depressed above and expanded below. *Labrum*, rounded into labium, more broadly below, very slightly produced above, double, white, smooth, not pectinated. *Labium*, scarcely detached from body-whorl, on a plane with labrum. *Umbilicus*, very shallow, broad. *Labral lamella*, scarcely produced. *Operculum*, slightly concave, very finely granulated in the centre.

Height 0.049, greatest breadth 0.066, least breadth 0.054.

Named in compliment to Arthur Adams, Esq., of London, the conjoint author with his brother Henry Adams.

This shell is like *I. Albersiana*, but differs in sculpture, number of whorls and measurements.

#### LINDSLEYA GUTIEREZIANA, Chitty.

*Hab.* New Hope, Westmoreland.

*Form*, globose-conic. *Colour*, pale horn. *Sculpture*, 16 strong spiral carinæ, only about the periphery one fine intervening; on the upper whorls, 5. *Spire*, well-elevated, with straight outlines. *Whorls*,  $5\frac{1}{2}$ , well-rounded, with a deep suture. *Aperture*, less than a semicircle, very slightly spreading, and very slightly deflected below. *Labrum*, slightly separated from body-whorl, rather produced above, in a broad notch, pectinated by about 15 of the strong carinæ. *Labium*, well-detached from body-whorl, curved inwards, more so below; thickened and reflected in the centre and its lower end towards the umbilicus. *Labrum* and *labium* continuous above; *labium* on a plane with labrum below. *Umbilicus*, deep. *Labral lamella*, sharply produced as it leaves the labrum, becoming narrow and abruptly lost in the umbilicus. *Operculum*, —?

Height 0.084, greatest breadth 0.15, least breadth 0.082.

Named in compliment to Señor Don Nicolas José Gutierrez, Curator of the Museum at the Havanna.

#### LINDSLEYA OWENIANA, Chitty.

*Hab.* Yallah's Hill.

*Form*, globose-conic. *Colour*, pale horn. *Sculpture*, 19 strong, rather inequidistant spiral carinæ; on the upper whorls 6. Striæ of growth visible. *Spire*, moderately elevated, with rather concave outlines. *Whorls*,  $4\frac{1}{2}$ , well-rounded, with a deep suture. *Aperture*, semicircular, rather flattened above, slightly expanded in the lower two-thirds. *Labrum*, rather produced above, not reflected, thin, strongly pectinated by spiral carinæ. *Labium*, rather detached from body-whorl, gradually curved to the right below. *Umbilicus*, rather deep and broad, slightly hidden by the *labral lamella*, which is but little produced. *Operculum*, concave, finely granulated, with, on the labral side extending half across, 5 horizontal raised lamellæ converging towards the umbilicus, the margins of which are covered with fine granulations giving the appearance of serration; lower

third laps tightly over the labium, grooved horizontally, and then finished by a linguiform, raised, folding projection.

Height 0·069, greatest breadth 0·094, least breadth 0·073.

Named in compliment to Professor Owen.

*LINDSLEYA WOLLASTONIANA*, Chitty.

*Hab.* — ? Hanover.

*Form*, globose-discoidal. *Colour*, white, semitransparent. *Sculpture*, about 31 very fine inequidistant irregular spiral raised carinæ, about 8 rather stronger than the rest; on the upper whorls 8. *Spire*, slightly raised, with convex outlines. *Whorls*,  $3\frac{3}{4}$ , very moderately rounded, with a light suture. *Aperture*, slightly constricted behind labrum, and then slightly expanded, semicircular. *Labrum*, very little produced above, thickened and reflected and very slightly pectinated by the stronger carinæ. *Labium*, well-detached from the body-whorl, moderately curved below, on a plane with the labrum. *Umbilicus*, moderately deep and wide. *Labral lamella*, narrow and sharp. *Operculum*, slightly concave, plain and smooth, except a few coarse granulations.

Height 0·036, greatest breadth 0·064, least breadth 0·05.

Named in compliment to T. Vernon Wollaston, Esq., M.A., so well known for his Natural History researches in Madeira.

Genus VIII. *BLANDIA*, Chitty.

*Shell subdiscoidal, not prominently sculptured.*

*BLANDIA BLANDIANA*, Chitty.

See *Stoastoma Blandianum*, Ad. Mon. Stoas. Adams, 1849, p. 6; Cat. Phan. p. 234.

*Hab.* Peace River, Manchester.

*BLANDIA JEFFREYSIANA*, Chitty.

*Hab.* Roaring River, Westmoreland.

*Form*, subdiscoidal. *Colour*, pale yellow. *Sculpture*, 22 fine distant and nearly equidistant spiral carinæ, 5 interspersed being rather stronger; carinæ, finer behind the aperture: on the upper whorls 6. *Spire*, very little elevated, with convex outlines. *Whorls*,  $3\frac{1}{2}$ , moderately rounded, with a light suture. *Aperture*, constricted at a distance behind labrum, and widely expanded and cupping inwards at the labium, rather flattened above. *Labrum*, moderately produced above, treble in the upper part, broadly but not deeply scoloped, and pectinated by the 5 stronger carinæ, much thickened, white and shining. *Labium*, thickened and much reflected to the left at its edge, curved to the right below, widely detached from body-whorl, much below the plane of labrum. *Umbilicus*, very deep and broad. *Labral lamella*, rather strong. *Operculum*, very concave, margined with a broad convexly raised ridge something like *Wilk. Schomburgiana*, with two deep plainly visible indented grooves on



the labial side; 5 sharp diagonal raised lines crossing from right above to left below on the labral side of the hollow.

Height 0·04, greatest breadth 0·063, least breadth 0·047.

Named in compliment to J. Gwyn Jeffreys, Esq., late of Swansea, now of London, a zealous conchologist and possessor of the finest British collection.

**BLANDIA BAIRDIANA**, Chitty.

*Hab.* Yallah's Hill.

*Form*, subdiscoidal. *Colour*, very pale horn or pure white. *Sculpture*, about 30 or 40 spiral carinæ, almost obsolete, scarcely visible under a  $1\frac{1}{4}$ -inch microscope, about 5 being rather more sharp than the rest; on the upper whorls about 7. *Spire*, very slightly elevated, with rather concave outlines. *Whorls*,  $3\frac{1}{3}$ , moderately rounded, with a light suture: last whorl rather flattened at the periphery. *Aperture*, semielliptical, very much produced from the body-whorl, rather depressed above, but elegantly expanded throughout. *Labrum*, very much produced above, joining the body-whorl in a very graceful serpentine curving lamella, (by which the shell may be distinguished,) much thickened and reflected. *Labium*, moderately detached from the body-whorl and thickened and reflected, slightly curved to the right below, very much below the plane of the labrum. *Umbilicus*, broad and moderately deep. *Labral lamella*, very sharp and narrowly produced. *Operculum*, deep concave, apparently smooth, or with blunt vertical lamellæ, margined all round, labial side much curved, rather pointed at upper and lower extremity.

Height 0·033, greatest breadth 0·062, least breadth 0·052.

Named in compliment to my friend Dr. Baird, of the British Museum.

*Var. Minor.* A much smaller variety, coming from the same habitat.

**BLANDIA MACGILLIVRAYANA**, Chitty.

*Hab.* (?) Pedro district, St. Ann's.

*Form*, subdiscoidal. *Colour*, pale yellow. *Sculpture*, 20 faint equidistant spiral carinæ; on the upper whorls, 6. *Spire*, very little elevated, with convex outlines. *Whorls*,  $3\frac{1}{2}$ , moderately rounded with a moderate suture. *Aperture*, large, very broadly expanding, slightly depressed above. *Labrum*, double throughout, but more so above, slightly reflected, white, smooth, much produced above, leaving the body-whorl at an angle of about  $50^{\circ}$ . *Labium*, almost appressed to the body-whorl in its centre, slightly curved above, more below to the right, below the plane of the labrum. *Umbilicus*, shallow and spreading. *Labral lamella*, very little produced. *Operculum*, not concave, but moderately sunk or depressed (flat or smooth) in its interior surface, more so at the lower labial side; edge on labral side much and broadly folded over convexly.

Height 0·034, greatest breadth 0·055, least breadth 0·045.

Named in compliment to John MacGillivray, Esq., the well-known and able naturalist and collector.

**BLANDIA TROSCHELIANA, Chitty.**

*Hab.* Clarendon Mountains.

*Form*, subdiscoidal. *Colour*, — ? (only two bad specimens). *Sculpture*, 23 irregular inequidistant coarsely rounded spiral carinæ obsolete at the periphery, 4 more prominent than the rest; on the upper whorls, 5. *Spire*, much depressed, with convex outlines. *Whorls*,  $3\frac{1}{2}$ , well-rounded, with a well-impressed suture. *Aperture*, very slightly expanded, rather flattened above and depressed below, more than a semicircle. *Labrum*, moderately produced above, double, white, thickened and reflected, very slightly pectinated by the four stronger carinæ, or rather squared as in *Wilkinsonæa Moussoniana*. *Labium*, well-detached from body-whorl, slightly curved to the right above and below, on a plane with the labrum below, lower above. *Umbilicus*, broad and deep. *Labral lamella*, very little produced. *Operculum*, smooth and concave, deep on the labial side.

Height 0·03, greatest breadth 0·059, least breadth 0·045.

Named in compliment to Dr. Troschel, of Bonn, Editor of the 'Archiv' of Natural History, &c.

**BLANDIA HILLIANA, Chitty.**

*Hab.* — ?, Westmoreland.

*Form*, subdiscoidal. *Colour*, pale horn. *Sculpture*, 22 inequidistant spiral carinæ, wider apart and stronger above, and a few at the periphery most raised; on the upper whorls, 5. *Spire*, much depressed, slightly concave. *Whorls*,  $3\frac{1}{2}$ , moderately rounded, with a rather deep suture. *Aperture*, very slightly constricted at the fauces, slightly expanded, depressed above, more than a semicircle. *Labrum*, well-produced above and pointedly, leaving the body-whorl at about an angle of  $30^\circ$ , white, slightly pectinated by about five points, thin, reflected. *Labium*, slightly curved below, well-detached from body-whorl. *Umbilicus*, rather deep and broad. *Labral lamella* and *operculum*, like *Wilkinsonæa Bensoniana*.

Height 0·025, greatest breadth 0·047, least breadth 0·041.

Named in compliment to the Hon. Richard Hill, of Spanish Town, Jamaica, well-known as an ornithologist and lover of general natural history.

**BLANDIA TRAILLIANA, Chitty.**

*Hab.* Clarendon Mountains (unique).

*Form*, subdiscoidal. *Colour*, pale horn. *Sculpture*, 5 coarser spiral carinæ and 2 coarse; 6th to 10th coarse, with one coarse between, and after each, 11th coarser, and 5 coarse, round umbilicus; on the upper whorls, 5. *Spire*, much depressed, with convex outlines. *Whorls*,  $3\frac{1}{3}$ , well-rounded, with a deep suture; last whorl well-rounded, large. *Aperture*, semicircular, slightly constricted at

a distance from the labrum, and then elegantly and slightly expanded. *Labrum*, well, and in an elegant curve, produced above, treble above and double below, as in *Helix Rupis-fontis* in my cabinet (N.B. since first describing this shell it has unfortunately got broken), very slightly thickened at its extreme edge, and white. *Labium*, moderately detached from body-whorl, wide and much reflected, curving slightly throughout, below the plane of labrum. *Umbilicus*, moderately deep and broad. *Labral lamella*, slightly produced. *Operculum*, — ?

Height 0·034, greatest breadth 0·057, least breadth 0·041.

Named in compliment to Dr. Traill (Malacca?), the great East Indian collector.

#### BLANDIA LUKISIANA, Chitty.

*Hab.* Near Port Maria (unique).

*Form*, subdiscoidal. *Colour*, pale horn. *Sculpture*, 27 fine sharp spiral carinæ, the 6th, 10th, 15th, and 23rd being rather stronger; on the upper whorls, 6. *Spire*, much depressed, with slightly convex outlines. *Whorls*, 3½rd, moderately rounded, with a moderate suture. *Aperture*, slightly depressed above, expanded below, semi-elliptic. *Labrum*, produced above in a curve, leaving the body-whorl in a quasi angle of about 80°, double and widely so above, pectinated by about 5 points, very slightly reflected, white. *Labium*, nearly straight, very little curved to the right below, slightly detached from the body-whorl, on a plane with the labrum above, lower below. *Umbilicus*, moderately deep. *Labral lamella*, rather produced in its centre. *Operculum*, — ?

Height 0·024, greatest breadth 0·051, least breadth 0·04.

Named in compliment to Dr. Lukis of Guernsey, an able naturalist and antiquary.

#### BLANDIA LOWEANA, Chitty.

*Hab.* Bodle's Pen Wood, St. Dorothy.

*Form*, subdiscoidal. *Colour*, dark horn. *Sculpture*, spiral carinæ, 5 less and 1 strong repeated four times, then 5 less and 2 strong, then 3 fine and 1 strong, and 4 less strong; on the upper whorls, 7 or 8. *Spire*, very slightly elevated, with slightly concave outlines. *Apex*, obtusely prominent. *Whorls*, 3½, very slightly rounded, with a deep suture. *Aperture*, more than a semicircle, rather expanded above, very slightly deflected and expanded below. *Labrum*, slightly produced above at the 1st and 2nd strong carinæ, broadly pectinated and scolloped by all the strong carinæ. *Labium*, well-detached from the body-whorl, below the plane of the labrum above, slightly rounded and nearly up to the plane of the labrum in the lower end. *Umbilicus*, moderately deep. *Labral lamella*, very sharp and narrow. *Operculum*, deeply concave in the centre and minutely granulated; two or three microscopic lamellæ crossing vertically, the edge all round thickened and deeply reflected outward, the upper edge having five or six deep irregular vertical folds.

Height 0·027, greatest breadth 0·055, least breadth 0·042.

Named in compliment to the Rev. R. T. Lowe, lately Chaplain in Madeira, and the well-known contributor to the natural history of that island.

2. LIST OF ADDITIONAL SPECIES OF MEXICAN BIRDS, OBTAINED BY M. AUGUSTE SALLÉ FROM THE ENVIRONS OF JALAPA AND S. ANDRES TUXTLA. BY PHILIP LUTLEY SCLATER, M.A.

M. Auguste Sallé, since his return from Southern Mexico (where he made the very extensive collection of birds, of which I gave an account in these Proceedings for last year), has received in Paris a considerable number of specimens procured by some of his correspondents in the same part of the country. Among them are many species of which he did not himself obtain examples. These he has been kind enough to send over for my inspection, and I have thus been enabled to form an additional List of upwards of sixty species of birds found in this part of Mexico, which were not included in my former catalogue. The majority of these were obtained in the environs of Jalapa and S. Andres Tuxtla, both of which places are within the confines of the State of Vera Cruz.

1. *SPIZAETUS ORNATUS* (Daud.).

Jalapa.

2. *HERPETOTHERES CACHINNANS* (L.).

Jalapa.

3. *ASTURINA NITIDA* (Lath.).

Jalapa.

4. *ELANUS LEUCURUS* (Vieill.).

Jalapa.

5. *ATHENE HYPOGÆA*, Bp., Cassin, B. Cal. p. 188.

Jalapa.

6. *PETROCHELIDON BICOLOR* (Vieill.).

S. José.

7. *PROGNE DOMINICENSIS* (Gm.).

S. Andres Tuxtla.

8. *MOMOTUS CÆRULEICEPS*, Gould.

Jalapa.

9. *HYLOMANES MOMOTULA*, Licht. Abh. Ac. Berol. 1838, p. 449, pl. 4.

Jalapa.